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Don't trust Software Update with your System Folder. Your applications may never forgive you.

Simon Jary
editor-in-chief



When updates go bad

Apple's Software Update feature in Mac OS 9 seems like a grand idea for keeping your Mac's system software up to date. You don't have to keep checking Apple's Web site for news of the latest updaters. Instead, you tell your Mac to look-out for you – preferably at 3am. Kick your Mac out of Sleep mode at 9am, and it will have downloaded all the new extensions and control panels, or be waiting for you to OK the downloads. Software is downloaded and automatically installed. You can even set-up Software Update so that you never know that new stuff has replaced old system parts.

Imagine this level of help in other aspects of life. Every Tuesday, you get back from work to find all your groceries stacked neatly in your fridge and kitchen cupboards. The moment you walk through the door, you smell the lasagne browning under the grill, and hear the salad spinning in the bowl. While you're eating, silent mechanics enter your garage and fine-tune your motor... and valet-clean it for good measure. Then, slip into the piping hot bath that poured while you watched the sink do the washing up.

Unfortunately, Domestic Update is a fiction. Software Update is real. Yet, it sounds like a dream, doesn't it?

Actually, it can be a nightmare. Software Update rides roughshod over the old adage "If it ain't broke, don't fix it". Software Update automatically thinks anything older than what it has to offer is definitely broken.

The Mac OS is seen as like the Forth Bridge by Software Update, which is happy to replace the perfectly acceptable Color Picker 2.0 with Color Picker 2.1 one day, and then junk that in favour of Color Picker 2.1.1 the very next. If your DNSPlugin extension has a version number lower than 1.1.3, Software Update laughs in your face. If EnetShimLib isn't up to 1.5.5, Software Update crushes it like it's a bug. Software Update doesn't know the difference between Speech Manager 1.5 and the world's most virulent virus.

Software Update is the *Logan's Run* of computer programs. It will kill anything old that it sniffs out on your system. Tick that little box allowing Software Update to automatically install new software over old, and you've issued a fatwa on perfectly decent parts of your operating system. You've given the go-ahead for all-out war on tried, tested and working components. You've just signed up to Software Update's very own Jihad on your system.

One of the worst offenders in Software Update's arsenal of good-guy killers is the Firmware Update. A Firmware Update doesn't just stab an OS extension in the back. It permanently changes aspects of your Mac's read-only memory (ROM), which tells your Mac where to look for things, what to switch on, what types of peripheral hardware it can cope with, etc. This stuff's so serious that Software Update can't handle it on its own. It requires you to poke a paper clip or other sharp object in a tender part of your Mac's body, and hear it scream a couple of times.

One recent Firmware Update suddenly refused to recognize a popular brand of RAM. One nod to Software Update and a quick poke with a pin eliminated large chunks of people's memory in the eyes of the all-seeing ROM.

A couple of months ago, I suspected a Firmware Update of doing the nasty to my copy of Microsoft Entourage. As un-updating Firmware ain't easy, I had to pray that one of Software Update's other demons had infiltrated my system.

After reading the excellent MacFixit Web site (**www.macfixit.com**) – run by *Macworld* contributing editor Ted Landau – I knew that I wasn't alone. Quite a few people's Entourage email clients were on a go-slow. Every letter I typed into my email took about half a second to appear on the screen. Touh-tyingleftoutevey furh ltte ina sntnce. It was quite annoying.

I followed MacFixit's advice, and got rid of a few extensions, and replaced them with some old versions that I had to search for on other people's Macs. Inexplicably, the final culprit was either Apple CD/DVD Driver 1.4.7 or CarbonLib 1.4. As soon as I had downgraded these extensions, my email returned to its old self.

Software Update forgets that extensions don't just come from Apple. Plenty of things in the System Folder come form other installations, and Software Update doesn't realize that its shiny new CarbonLib absolutely can't stand the sight of some bit of Microsoft or Adobe code that's been fine with everything else until that point.

I'm not advocating Apple hangs around waiting for every software developer to update their software, it seems more than reasonable that Apple should delay until certain major programs are at least semi-prepared. If a system update doesn't work with Adobe Photoshop, QuarkXPress, Microsoft Office, or even Apple's own iMovie, iTunes and iTools, then it shouldn't be let loose as a download.

Perversely, the biggest update of them all – Mac OS X – handles this sort of thing far more sensibly, with proper 10.1.x upgrades.

To make sure that you stay up to date while not unleashing Armageddon on your system, I recommend you watch the posts on MacFixit for a few days after Software Update alerts you to possible changes. If no one cries help, write down exactly which extensions Software Update wants to install, keep a copy of the old ones before you click OK – and dump the new ones at the first sight of trouble. If it ain't fixed, then break it. **MW**

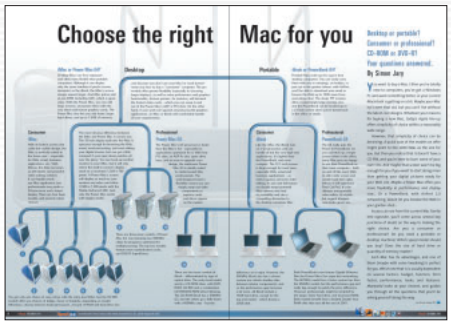


'Tick that box, and you've issued a fatwa on perfectly decent parts of your operating system. You've just signed up to Software Update's very own Jihad.'

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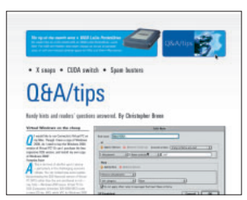
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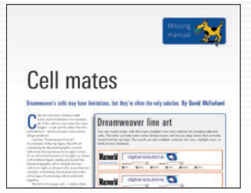
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Email letters@macworld.co.uk. *Please provide full name and contact details.*
…or write to: Letters, Macworld, 99 Gray's Inn Road, London WC1X 8UT.

Subject: iPod music to the ears
I don't agree with *Macworld* that Apple's new iPod is "expensive". £349 for a shirt-pocket-sized 5GB FireWire hard drive that's also a fantastic digital-music player looks like a bargain to me.

The LCD display on the iPod looks brilliant, and the ability to quickly scroll through 1,000 songs while on the move surely answers everybody's dreams. It may not be cheap, but the iPod does everything you'd want an MP3 player to do... and more – data transfer! A decent portable CD player costs at least £150, so £349 for the hottest gadget in town isn't too much to ask.
Lisa Tait

Subject: X-men control freaks
I chose a Mac over a PC because the Mac OS didn't attempt to control my personal computing life. Now, OS X, with its Unix core, promises to do exactly this. I'm seriously thinking of pulverizing my OS X 10.1 CD. Yesterday, I heard a colleague claim that there's not much difference between Macs and PCs anymore. Having fought against two versions of OS X, I tend to agree.
TB Hansen

Subject: Broadband broadside
Telewest broadband boom? What broadband boom? I work just 10 miles from Oxford, but broadband access for my hilltop village – Brill, in Bucks – remains as remote a prospect as ever.
David Jefferis

Subject: Lucky bleaters
What is it with all the moaning minnies that write into *Macworld*, bleating about how they've just bought a new computer and now it's out-of-date? Or that they want a free upgrade to Mac OS X, even though their machine is over a year old? Get over it. Computers without exception are old and out-of-date after a few months. It's always been like that, thank heavens. Otherwise, we'd all still be beavering away on Mac Pluses. Apple exists to make money, and to help us to make money. It's not a charity.
Jonathan Harley



I thought you might find this image interesting. It appeared on an advertising hoarding in London's Muswell Hill – before being quickly pasted over. Long live art terrorism. Long live Apple!
Steven Carter

Star Letter: Hub of the issue



I've always taken companies' marketing ruses and sales pitches with a pinch of salt – seeing them as nothing more than verbal junk-mail. Being a work-only PC user, I similarly dismissed Apple's evangelizing of Macs as digital hubs to be so much sales puff – until I saw what a Mac-owning friend of mine did with her wedding video.

This friend took raw MiniDV footage shot by two friends on her big day on different digital camcorders, and, using iMovie 2, created a professional-looking and engrossing video. It was a million times better than the usual home-video dross that most people inflict on friends and family. I was amazed that she was able to create such a thing on software that came bundled with her iMac. I have since asked her to give me a run-through of iMovie, and now understand totally what Apple means by the Mac being a digital hub. Not only am I planning to buy an iMac, but I'm also looking to splash-out on a digital camcorder.

I guess it's hats off to Apple, for helping this hard-bitten cynic to see the digital light.
Stephen Whitehead

Subject: Not now, John Lewis
I would like to echo the sentiments of Don McClymont (Letters, Expo Issue), who told of the PC bias of many department stores. Recently, I was in John Lewis in Edinburgh with my aunt. When she asked for a Mac, the salesman immediately tried to redirect her to a Windows box, saying Macs were bad value and that no one used them. He was extraordinarily reluctant to show us the iBook we came to see. If Macs can survive this kind of sales subterfuge, they must be good!
Ranulph Glanville

Subject: Quark strangeness and harm
QuarkXPress 4.0 is outdated and outclassed by both InDesign and PageMaker, so version 5.0 was surely a chance for Quark to catch up. But what's it offering in 5.0? Layers and rudimentary HTML options. Layers has been InDesign and PageMaker for years, but 5.0's real clanger is attempting to swing between print- and Web-oriented documents. This is like transfering a radio programme to TV: it hardly ever works, because the media are intrinsically different.

For professional online content stick to Dreamweaver, GoLive or FileMaker.

Quark is like the emperor with invisible clothes. Only this time, it hasn't just lost its clothes – it's lost the plot.
Trevor Hatchett

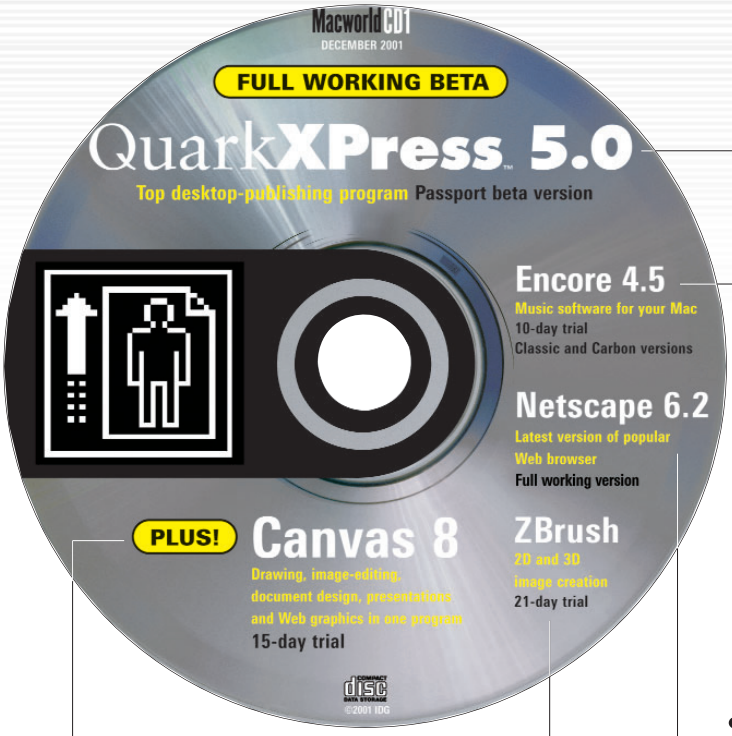
Subject: Roman knows
Call me picky but, if Apple is insisting OS X is pronounced OS "ten" then surely the Roman numeral equivalent to 10.1 should be X.i.
Andy Frizzell

Subject: XP all atrocious
Is it me, or is Microsoft's promise that its Windows XP OS offers improved reliability, speed and ease of use sound eerily familiar? Windows DV would've been more fitting – for *déja vu*.
Neil Olner

Macworld.co.uk Join in the live IT debates on Macworld Online Forum (www.macworld.co.uk/forum).

Take QuarkXPress 5 and Canvas 8 for test drives, and enjoy trials of ZBrush and Encore 4.5 plus the full Classic and Carbon versions of Netscape 6.2. Demos, shareware, updaters. Vic Lennard's on hand to show the way...

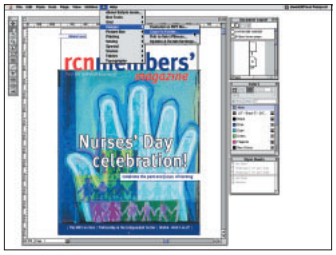
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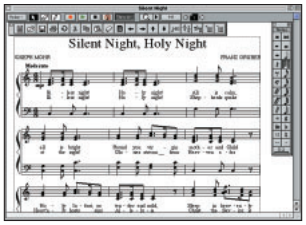




QuarkXPress Passport 5.0 Beta

This new release updates the renowned QuarkXPress print-design tools and also applies them to the Web. With QuarkXPress 5.0, you can now design Web pages with the same precise control and creative latitude that you've come to rely on for print. Create content once, and publish it through the media formats your customers demand, including print, Web, wireless devices, and ebooks. This beta software should not be used for any production work. Requires a Power Mac running OS 8.6 or later.



Encore 4.5 10-day trials

Encore's powerful transcribing and editing capabilities help musicians of all levels get their ideas into print. Fast, accurate, and easy to use, Encore allows you to create beautiful printouts of your scores – using up to 64 separate staves – whether you're creating motion-picture scores, orchestral arrangements, choir song-books, or teaching music in school. Separate Mac OS 8.6, OS 9 and OS X versions.

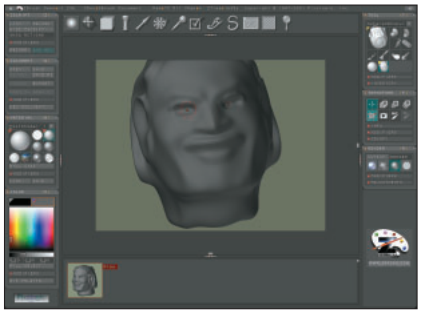






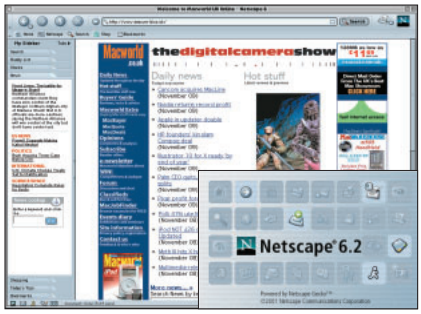
Canvas 8 15-day trial

With over 100 new features and enhancements, Canvas 8 is a major upgrade. New features include: improved bézier-curve selection and manipulation tools; real-time Pixel View of your vector art; instant drawing-tool selection with a single key press; manual Web image slicer, new text tools, new effects, and much more. Go to **www.deneba.com/download/evaluate** to obtain a 15-day password. Runs as a demo otherwise. Requires a Power Mac G3 or better, and Mac OS 9.0.4 (64MB RAM) or OS X (128MB RAM).



ZBrush 21-day trial

ZBrush: a painting product that simplifies the science behind generating computer graphics. By providing a unique synthesis of 2D and 3D capabilities in a single stand-alone tool, ZBrush offers tremendous flexibility – and all aspects of each pixel are rendered in real-time. Password works from 1/12/01; an additional 21-day password is available from Pixologic.



Netscape 6.2 (full version)

Netscape 6.2 has been designed with efficiency in mind, to reduce the number of steps – and time – it takes to get things done on the Web. Switch between themes to change the look of all components and windows, integrate almost any search engine, and enjoy easy access to multiple email-accounts. Requires Mac OS 8.6 or later or Mac OS X.

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Cover CD
DECEMBER 2001

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INSTALL

Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

Acrobat Reader 5
Install this version to be able to read many of the on-screen manuals.

StuffIt & RealPlayer
Version 6.0.1 of StuffIt Expander and DropStuff is included as is the installer for RealPlayer 8.

System tools & ATM Lite
The CD also carries the latest version of InternetConfig, UnZip 5.32 and ATM 4.6.2 (required for Suitcase).

QuickTime 4.1.2
Some programs require QuickTime 4.1.2. This can be downloaded from www.apple.com/quicktime/download.

INSIDE MACWORLD

iSlideShow 1.2
Easy way to create slideshows for multimedia projects and Web pages. Over 65 transition effects, plus Export to QuickTime. Shareware.

MacPopUp 2.6.1
Allows Mac and Windows users to exchange instant messages with other users on any local area network – corporate, school or home. Shareware.

PageSpinner 3.1.2
HTML editor that supports HTML 3.2, HTML 4, XHTML 1.0 plus additional Netscape and Explorer extensions. 21-day trial.

TinkerTool 2
Adds functionality and options to many OS X features, including control of font anti-aliasing and displaying hidden files. Freeware.

VCD Player 1.5.3
Simplifies the process of playing video compact discs (VCD) on your Mac. Shareware.

Plus...
asm 2.0.2, CarbonMaker 1.0
Discalog 1.2, EndNote demo,
IconizerPro 1.6.4, Mesa 3,
PrintToPDF 2.3, SnapTalk 2
Snapz Pro X 1.0.1
TransType 2.0.2 demo
WebPrintPlus 5.0 demo
WindowShade X



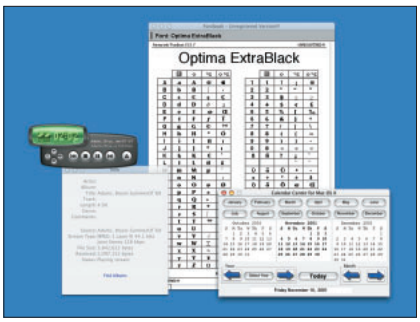
Font Reserve 2.6
Font-management tool for organizing, maintaining & using fonts. Demo.

CD CATALOGUE

Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2001 – over 247,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (2.1.1) is also included – don't forget to register if you find our library useful.



OS X HEAVEN



OS X Heaven – your monthly one-stop shop for the latest OS X-specific software. Utilities, demos and shareware – OS X Heaven features the best Carbonized goodies for the Mac's new OS.

This month there's over 20 demos and shareware programs, including CalendarCenter 5.2, a useful tool to quickly view three months at a time, FontBook 3.5.1, Lemke Software's excellent font utility that displays and prints all fonts, and Audion X 2.6.1, the all-singing, all-dancing audio and MP3 program.

Also included are Unscrambler, the words-from-letters utility, and Quit Anything X, which literally quits all processes in one fell swoop.

XCHANGE INTERNATIONAL





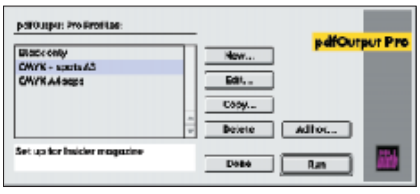
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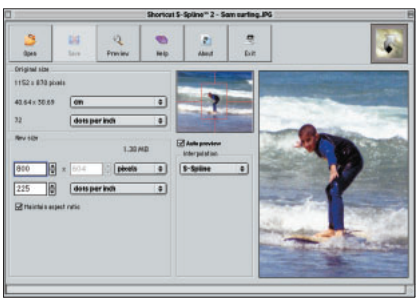
XCHANGE INTERNATIONAL

XChange International, which specializes in QuarkXPress XTensions and plug-ins for Photoshop, Acrobat & InDesign, highlights products each month, with demo versions available for you on the cover CD.

S-Spline 2 enables the enlargement of digital images with virtually no loss of quality. XPert Scale carries out group scaling intelligently in QuarkXPress while FullColor XT is used for superb colour handling. Photo/Graphic Edges 10,000+ provides Photoshop users with a huge variety of image border effects. Finally, pdfOutputPro, an Acrobat plug-in, outputs files as separations.

Visit **www.xchangeuk.com** for more info.





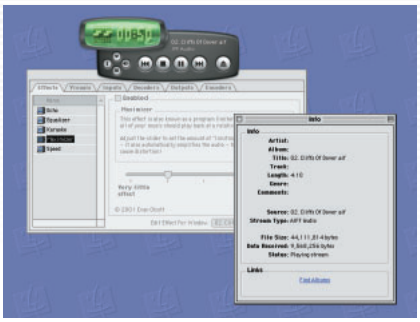
page 18

Cover CD
DECEMBER 2001

FAULTY COVER CD-ROM?

•If your cover disc is broken and you want a replacement CD, please contact Kelly Crowley, on 020 7831 9252, or email at kelly_crowley@macworld.co.uk.
•If your cover CD doesn't seem to work as it should, please check you have read all the instructions on the cover disc pages carefully first. If it still doesn't work, then please email Woody Phillips at cd@macworld.co.uk.

SERIOUS SOFTWARE *includes*

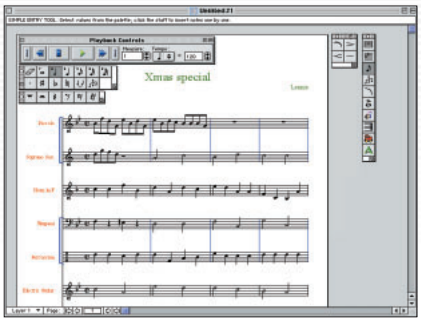


Audion 2.6.1

Audion 2 is a single tool for all your audio-playing needs, from audio CDs and MP3s to streaming network-audio. Encoding, editing, mixing, sorting – it handles the lot.

The latest version includes CD burning in one click, complete dock integration, toolbars for easy access to all features, special Mac OS X features, enhanced search facilities, and CD title entry.

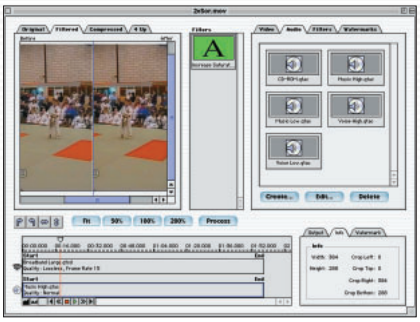
For 15 days, the Audion player will work in its entirety. After that, sessions are limited to 30 minutes. For MP3 encoding, the demo is limited to 20 encoded files or 30 days, whichever comes first. Requires a Power Mac running Mac OS 8.1 or later.



Finale NotePad 2002

This is your invitation to the world of music-notation software. Finale NotePad 2002 can transform your musical ideas into printed music the easy way. Place a sharped, dotted quarter note on the staff in one easy motion. That's how simple it is to use the new Simple Note Entry tool. The cursor shows exactly what you've selected. No collisions with stems, beams or accidentals – just click, drag-&-draw! Includes online Quick Help and the ability to save as a SmartMusic Accompaniment. Finale NotePad 2002 will open any file from the Finale Family: Finale, Allegro, PrintMusic! or NotePad.

Requires a Power Mac running OS 7.6.1 or later.



HipFlics 1.1 demo

Whether you're new to digital video or a professional, HipFlics offers both functionality and simplicity. Amateurs will be impressed by its simple interface, ease-of-use and presets, while advanced users can take advantage of features such as multiple-video compressors, batch-processing, cropping, rotating, watermarking, filtering effects and its 'Before & After' feature, that allows you to preview settings before processing.

The demo has a time limit of 30 seconds on output video and incorporates a Totally Hip Software watermark. Requires a 333MHz Power Mac or better, running OS 8.6 or later and QuickTime 5.0.2.

ALSO ON THE CD

COMMS & INTERNET
13 programs including:
CreativePage 2.8.1
HTML Converter 1.2
HTML-OptimizerPlus 3.5.1
SnapperHead 4.2
WebsiteCompressor 3.0.0

FONTS
FontBook 3.5.1
FontViewer 1.4.2
Mini FV 1.2.1

GRAPHICS
Six applications including:
ConvertImages 1.7



PhotoGrid 2.4
ptah 1.4.2
QuickMovie 1.4

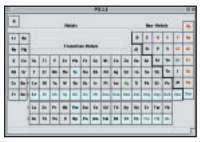
ICON UTILITIES
IconCalculator 1.0.6
Iconographer 2.2

INFO



ATPM 7.11
Extension Overload 5.9.3
plus seven utilities for developers

MATHS & SCIENCE
Seven programs including:
earthbrowser 1.5.5



PTE 2.8
TopCalculette Pro 3.2

SOUND & MUSIC
Eight programs including:
Amazing Slow Downer 1.12
MP3 Rage 3.9.1
Virtual Composer 2.9.1b4

UTILITIES
Eight categories with 32 useful tools for your Mac including:
A-Dock 2.6
AutoSpellCheck XT
BTV 5.2



BTV Pro 5.2
CCN Plus
ConverTable Units 1.8
CreaseProof 1.5
CreaText 1.4.3
Double Save XT
Doublet Scan 3.4.1
File Buddy 6.1.4
File Freak 3.5.1
FinderPatch 4.0
FloatingNotes 1.2
FoldersSynchronizer 2.2
Job Time XT
MacDICT 2.1
qxpIconator 1.05
Rosetta 1.4.1
RTF Import XT
Startup Doubler 2.6.1
Style 19
SwitchBack 3.5
TimeSlice 2.2.4
Troi Serial Plug-in 2.2
Wapp pro 3.3.1
Writer 2.3

UPDATERS
This month's dedicated updaters folder includes almost 80MB of patches to bring many popular applications bang up-to-date, including:
CubaseVST 50r2
D1 Desktop 64 AV 5.1
Enhance Preview XT 214r5
FaxExpress Network 6.0.2
FaxExpress Solo 6.0.2
MacDraft 5.0.5
Media100i 751
Norton AntiVirus 5-7 (11/01)
TechTool Pro 3.0.5
VectorWorks 9.5.0
Virex (11/01)
VirusBarrier (11/01)
VSE Search Engines 11/01

DON'T MISS…

Cool Extras

The Spook
Enjoy the October issue of the only full-blown PDF consumer magazine!



Latest icons
Three sets of really cool additions to your icon library

Mac ISP
Access offers from AppleOnline & Moose Internet Services.

Internet Explorer
Complete package IE 5.

Plus…
… many thanks to Simon Youngjohns for our CD icons.

SHAREWARE

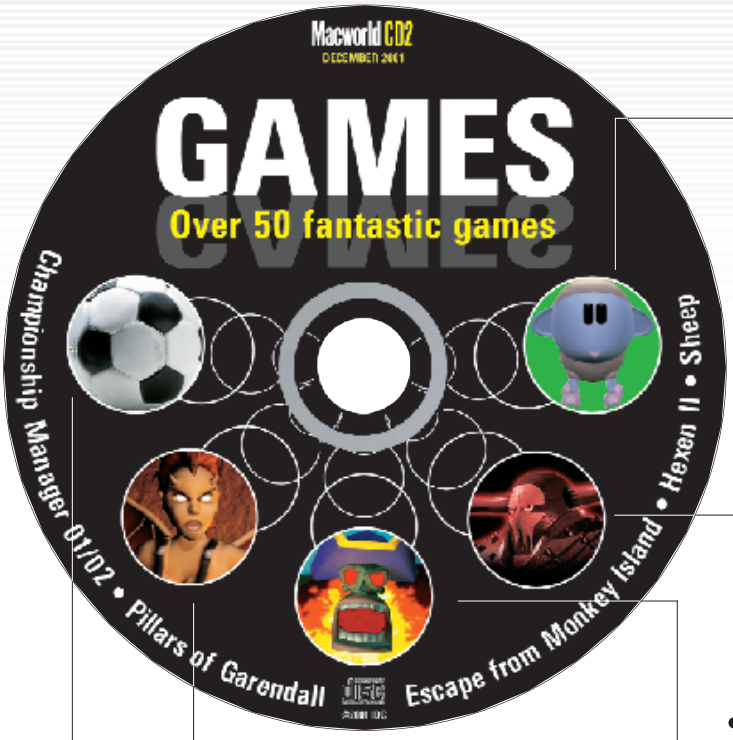
Association of Shareware Professionals

Shareware is a distribution method, not a type of software. It makes fitting your needs easier, as you can try before you buy. Shareware has the ultimate money-back guarantee – if you don't use the product, you don't pay for it. If you try a Shareware program and continue using it, you are expected to register. Support shareware authors so that they continue to provide high-quality programs for the Mac.

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Relax and enjoy the five huge game demos totalling over 320MB, plus a further 50 shareware games and demos divided into various genres, including over a dozen just for OS X. Question is: when will you get your work done?

MAIN ITEMS





Sheep demo

Many years ago, the ancestors of today's modern sheep were sent out across the galaxy, and a few of these explorers landed on Earth. Their mission was to pose as stupid peace-loving creatures and study the habitat. Now, the sheep's ancestors have returned to Earth from Ovis, to reclaim their lost flock. If you believe that, then this is definitely the game for you!



Requires a 233MHz Power Mac with OS 8.6 or later and 32MB available RAM (or is that ram?)

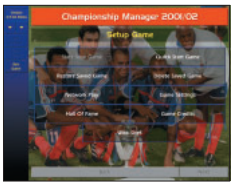
GLHexen II three-level demo

Back in 1997, Raven Software released Hexen II for Windows 95. With the release of the source code, a Mac OS version appeared followed by the slick OpenGL version here. This folder has everything you need to play the original three-level demo.



The goals in Hexen II are simple: stay alive, solve the puzzles and defeat your enemies.

Requires a Power Mac, OS 8.5 or later, 48MB available RAM, and a video card supporting OpenGL.



Championship Manager Season 2001-2 demo

Live out the dream of managing your favourite football team. Move quickly between screens to compare and filter information, and make the critical decisions that define whether you are, indeed, a Championship Manager.

This demo is a cut-down version of the full game. It comes with a single 'Quick Start' file for the English leagues. Just click on the 'Quick Start Game' button and follow the game prompts.

Check the Read Me file for requirements.

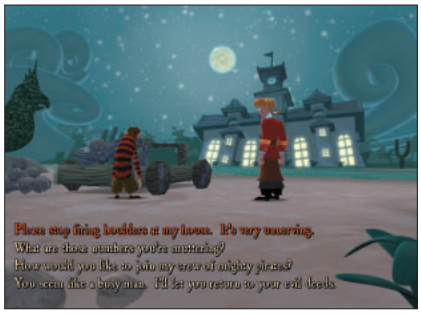


Pillars of Garendall demo

Welcome to Pillars of Garendall, a huge epic fantasy role-playing game. You'll need a sharp-edged blade and a heart of steel to survive.

With this demo, explore part of Garendall's dream-like sprawling world and intricately woven tapestry of a story.

Requires a Power Mac running Mac OS 9 or later, with 60MB available RAM.



Monkey Island big demo

In Escape from Monkey Island, Guybrush and his new bride return to Mêlée Island from their honeymoon. They quickly discover Elaine has been declared dead and the Governor's mansion is to be demolished. Full of intrigue, side-splitting humour and challenging puzzles.

Requires a 233MHz Power Mac, 96MB RAM, 3D video card and Open GL 1.2.1.

New-look AirPort 2 faster, more secure



Up to £300 off Mac and LCD

The all-digital desktop is now more affordable, with Apple's rebate offer of up to a £300 against the cost of its flat-panel monitors in its "Crystal Clear Savings" deal to Power Mac purchasers.

Buyers of Quicksilver G4 Power Macs can buy a matching Studio or Cinema Display at a discount. The company has set up a mail-in rebate system for the offer; the coupon is available for download from Apple's Web site (www.apple.com/uk).

The deal extends until December 31. One cash-back deal is available for each 733MHz, 867MHz or dual-800MHz Power Mac purchased.

The rebate can be used against Apple's 15-inch and 17-inch Studio Displays, and the company's 22-inch Cinema Display. These cost £449, £699 and £1,799 respectively (ex. VAT) without the vouchers.

The amount of discount depends on the model of Power Mac bought. All current Apple monitors are covered by the deal, with a £60 rebate available on the 733MHz Mac; £180 on the 867MHz G4; and £300 on a dual-processor G4.



Moving beyond the box, Apple continues to develop its vision to place the Mac at the centre of the digital hub, with the release of AirPort 2.0, the broadband-ready, new generation of its AirPort wireless-networking solution. Apple is, however, sticking with the 802.11b Wi-Fi standard, rather than moving to the faster, but less common and robust, 802.11a.

The company takes CEO Steve Jobs' recent assertion that "wireless networking is the future for education" seriously. AirPort 2.0 maintains that vision, and adds extra utility – aimed mainly at the lucrative US K-12 education market.

On AirPort's launch at Macworld Expo New York in July 1999, Jobs discussed the "liberating experience" of freely moving "around the home or classroom while wirelessly accessing the Internet".

"With AirPort we can now bring fast Internet access to every room in the house and every desk in the classroom," he proclaimed.

"We've built in a firewall to ensure the information stays separate, and to prevent Web attacks" – Peter Carcione, Apple's AirPort Product Marketing Manager

AirPort talks to anyone

AirPort 2.0 is based on the 802.11b (Wi-Fi) standard for wireless Local Area Networks (LANs). The Wi-Fi standard is widely used for LANs in the US, with such networks installed in airports, coffee shops and conference centres. Because it's a standard, an AirPort-enabled Mac is interoperable with any other product that implements the standard (including Windows-based PCs). The supported range remains at 150-feet – even through brick walls.

The product revision improves AirPort's software and hardware, introducing a maximum 128-bit (or 64-bit) encryption for added wireless security, and including a built-in firewall for the first time. Apple claims its solution "offers encryption and password capabilities that deliver a level of security comparable to that offered by traditional wired networks."

AirPort 2.0 also supports 50 users (against the previously supported 10) sharing one Base Station, and offers the first wireless LAN solution for AOL 5.0 users.

Online and unwired

"Apple has consistently led the industry in 802.11b wireless networking," said Philip Schiller, Apple's vice president of worldwide product marketing.

"Now we're adding another industry first with support for AOL, and great new security features like a built-in firewall and 128-bit encryption."

AirPort 2.0 software can be used to add 128-bit encryption to existing AirPort Cards (but not Base Stations). Apple told *Macworld* that "it is currently working on AOL support for Europe", but could not commit to a time frame.

Initial reports hint that, even as a software update for existing AirPort users, version 2.0 considerably improves the performance of an AirPort network, bringing connectivity speeds closer to the theoretical maximum 11Mbps.

"We have a unique card-architecture, which gave us the ability to update the Card," said Peter Carcione, Apple's AirPort product marketing manager.

AirPort 2.0 Base Station
Actual size



"You can't update the old AirPort Base Station to 128-bit, because it has a different architecture."

X-factor products

Mac OS X and AirPort offer a potent combination. Because OS X is a multihoming operating system, it can automatically sense and adjust to different network types available at varied locations. The Unix-based next-generation operating system is built for networking, and the addition of a more secure AirPort 2.0 opens the doors for using these features – wirelessly. Educators should find uses for this.

All Macs are now AirPort-ready. This means they have antennae built-in which – with the addition of an AirPort card – means they can talk to their local Base Station. Macs can then wirelessly interact with each other as on any wired network, and enjoy shared Internet access through the Base Station's built-in 56K (V.90) modem.

The Base Station also has a 10BaseT Ethernet port for wide-area connections, such as cable modems or ADSL. Apple has added an additional 10/100BaseT Ethernet port to the product, for direct connection to a wired LAN.

PowerBook profits

The antenna inside the Base Station has also been given a redesign. Until now, some PowerBook users have reported difficulty staying connected to a Base Station at any great distance. Although the range of the Base Station remains at 150 feet, the new antenna design allows for better reception within that AirPort's range.

"We have a new antenna design, which allows for an almost perfect sphere around the product, to provide more consistent coverage within the 150-foot range," said Carcione.

The new software for Mac OS X does not include support for a Software Base Station, according to Apple. "We've found the basic function is covered, and that's having the computers talk to each other – peer to peer. We do not yet have a Software Base Station feature in OS X," he said.

High security

AirPort's built-in firewall has a port-mapping feature, so access to certain computers on a network can be set up without disabling the firewall protection. The firewall protection can also be set to protect all the wired computers on a network, simply by placing the product between the Internet and the hub.

The firewall protection works by using a private network-address system. When the Base Station is configured to share the Internet connection with other machines, it distributes private network addresses to all the computers on the network. The resulting addresses are known only by the Base Station, protecting individual computers from Internet Protocol (IP)-based attacks.

Security is important. Apple knows this, and has introduced RADIUS (Remote Authentication Dial-In User Service) and Cisco LEAP (Lightweight Extensible Authentication Protocol) protocols support in AirPort 2.0. RADIUS is a powerful new AirPort feature that enables administrators of roaming networks (those with two or more base stations) to update access-control lists quickly and easily, and store them on a remote server. LEAP offers tighter network security.

To b, or not to b

The company has not adopted the 802.11a Wi-Fi standard, which offers better range and other advantages against the current 802.11b standard. Apple suggests this is to encourage compatibility with existing networks, particularly in educational set-ups.

Greg Joswiak, Apple's senior director of hardware product marketing, explained: "The infrastructure in schools, which is a very large market for this product, is an 802.11b infrastructure."

The complete solution consists of a Base Station, AirPort 2.0 software and an AirPort Card. The software is available for download in both OS 9 and X versions (**www.apple.com/airport**). The Base Station will cost £249 (inc. VAT) when it ships in the UK in mid-December. The AirPort Card costs £79 (inc. VAT). **MW**

Jonny Evans



Mac OS X 10.1.1

Apple has released another system update for Mac OS X – version 10.1.1. The update is currently available using the Software Updates control of Mac OS X.

It delivers improvements for USB and FireWire devices, including support for more models of digital camera, as well as improvements to CD and DVD burning from the operating system.

Enhancements have also been made to some of OS X's protocols, including WebDAV (World Wide Web Distributed Authoring and Versioning), SMB (Server Message Block Protocol) and AFP (Apple Filing Protocol). Printing support is also improved by the update.

The company's engineers have improved the Finder and the Mail application, and accelerated video-mirroring has been enabled for PowerBook G4s. **MW**

OPINION

The trivialization of Palm

WHICH? says 'Buy Macs'

The highly respected *Which? Magazine* – run by the Consumers Association – has published findings that show "an impressive nine out of ten (91 per cent) of owners say they would definitely recommend" Apple's portable computers.

The findings come from the Which? November 2001 annual survey of the UK computer market. It reveals 40 per cent of UK households already have PCs. The survey asked 7,654 PC owners for their opinions regarding the ease of use, satisfaction and reliability of their PCs. For desktops, most owners would recommend UK PC maker Dan (83 per cent), with Apple a close second at 79 per cent. Sony portables were recommended by 61 per cent of owners; just 38 per cent of Compaq laptop owners recommend it.

The Mac is defined as the easiest-to-use computer, according to 67 per cent of desktop users. Apple's was the third most reliable brand (86 per cent), narrowly behind IBM and Compaq which tied at 89 per cent.

Which? Says: "If you want to buy a desktop, the brands to go for are Dan, Dell and Apple." Consumers wanting a portable receive unequivocal advice: "If you're buying a laptop, we recommend you choose an Apple one." MW

The resignation of Palm Inc. CEO Carl Yankowski last month gives the company a chance to re-assess his chief legacy: the concept of the "Palm lifestyle." More than anything else, this idea of computer as lifestyle has trivialized Palm.

The Palm lifestyle: haut couture, the digerati – all so cool that it's hot. Or is it vice versa? On Yankowski's watch, Palm signed a deal with "digital entrepreneur" and supermodel Claudia Schiffer to bring out her own version of a Palm handheld and a clothing deal for allegedly fashionable outerwear pre-wired for Palm devices.

So far, the company is not exactly seizing its chance with gusto. The day after the news that Yankowski had resigned, Palm announced it is launching a TV and online advertising "blitz" aimed not at the mobile professional but at some creature known as the "mobile majority".

The breathless release quotes Palm's Ken Wirt, senior vice president of Solutions Group Marketing, proclaiming that for the mobile majority, "useful and relevant applications are king". The strategy chief of AKQA of San Francisco, which developed the ad campaign, assures us that the new ads are "modern and digital, and they reflect the personality of Palm".

I can see the stock price surging....

Yankowski was hired not quite two years ago to replace someone named Robin, who apparently was around barely long enough to activate her stock options. Palm's parent 3Com Corp. has been trying to fill the void left by Palm founders Jeff Hawkins and Donna Dubinsky, who re-invented Palm themselves by creating Handspring Inc., a device builder that licenses the Palm OS software.

Yankowski's success in consumer product marketing for Reebok, Sony and Polaroid was thought to be ideal to establish Palm as the pre-eminent consumer brand for PDAs. The only problem is that people are still trying to find something worthwhile for PDAs to do. You can play games on them. You can check your daily schedule. You can locate the nearest Starbucks Coffee shop. You can get the results of the Premiership game last night if for some reason you didn't turn on your TV or radio this morning, and get the two-minute summary on the local news broadcast while you were fixing your first mug of coffee.

I don't think this is the market for handheld devices: Most of these functions can already be done with existing phones, newspapers, GameBoy consoles and a pocket calendar you can buy at Superdrug.

While Palm was making a bosom pal of Ms Schiffer, arch rival Microsoft was doing what it does best: learning from its mistakes. Each time a new release of Windows CE/Pocket PC was released to critical bludgeoning, Microsoft engineers went back to work improving it, with the enterprise user clearly in mind.

Enduring endless jibes about how Palm had zillions of applications and developers writing for Palm OS, Microsoft slowly began expanding contacts with these people, aiming at vertical industry segments.

While Palm now has delayed introducing some key wireless features, Microsoft has been expanding wireless support in the operating system. It seems likely that Microsoft at the moment is better placed than Palm to build-in support for the emerging group of Web services based on XML, Simple Object Access Protocol and similar standards.

Palm OS may remain the dominant operating system right now. But that dominance is no longer a sure bet. By and large, Microsoft has simply been doing a better job at providing the enterprise with the complete package – operating systems, applications, hardware and middleware – that can link portable, programmable handheld computers with enterprise data and applications.

For the enterprise, mobile and wireless computing are not lifestyle choices. They're business. **MW**

John Cox



"While Palm was making a bosom pal of Claudia Schiffer, arch rival Microsoft was doing what it does best: learning from its mistakes"

iTunes 2.0.2 fixes X data-loss problems

Apple has released iTunes 2.0.2, following unexpected data-loss problems reported by some OS X users installing iTunes 2.0. Apple confirmed the problem, identifying an installer issue with iTunes 2.0 for Mac OS X that affects a limited number of systems running OS X with multiple volumes (drives or partitions) mounted."

The company advises that "while this error is highly unlikely to affect most users" people in possession of iTunes 2.0 should remove the iTunes.pkg installer file from their Mac, and download and install version 2.0.2.

iTunes 2.0.2 synchronizes perfectly with Apple's iPod digital-music player, and introduces new features much requested by loyal iTunes users. These include the introduction of a ten-band equalizer with over 20 presets for different music genres. The application can also cross-fade between songs for an improved listening experience. The application burns CDs twice as fast as before. More details from www.apple.com/itunes/alert.



AOL UK and Apple fall out over OS X

"It's not possible for us to justify the considerable investment required to create a new localized version of our browser."
– Matt Peacock, AOL UK's chief communications officer.

AOL UK has ceased development of AOL 5.0 – its browser for Mac OS X – despite previous assurances from the company of its support for Apple's Unix-based OS.

AOL released a beta version of AOL 5.0 for Mac earlier this year, but this has hit developmental problems – calling the whole project into question. In a recent email sent to UK beta testers, the company revealed it had ceased development of its browser for OS X.

AOL UK's chief communications office Matt Peacock said: "It's not possible for us to justify the considerable investment required to create a new localized version of our browser for a niche market platform such as OS X."

In the email, Dominic Wells, AOL UK's editor-in-chief, wrote: "We're a mass-market company, and the mass-market computer of choice is the PC – so our priority has to be to develop new software for this audience.'

Apple's UK PR Manager, David Millar explained Apple's attempts to expand the company's market share. "Through our extremely strong set of consumer products, Apple is growing its position in the consumer market and making the platform more attractive for developers," he said.

With an estimated 1.5 million users, AOL is the third largest ISP in the UK after Freeserve and Tiscali.

Last week Apple and AOL jointly announced AirPort 2.0, which offers out-of-the-box support for AOL users in the US. Peacock said: "I must stress that we still support the Mac. Existing AOL clients will be supported indefinitely on Mac operating systems already supported by us.

"The problem we have is the lack of an installed base at this time. This decision is not set in stone. We will evaluate the development of the Mac OS X market closely. As the user base grows, we may choose to develop for it again."

The situation is different in the US, where AOL is "definitely planning" a Mac OS X version of its software.

"A version of the AOL software that is compatible with Mac OS X is currently in development, and is expected to be available later this year," said Kristie Cunningham of AOL's communications group.

History interrupted

Apple and AOL have a history almost as old as the Internet itself. AOL introduced online services for Mac users in October 1989, supporting the Macintosh and Apple II – it didn't begin supporting IBM-compatible computers for another two years, and a Windows version didn't appear until 1993.

In 1995, Apple purchased two million shares of AOL stock for $12.5 million – 5.1 per cent of AOL. The company sold these shares in 1996 at a profit of $39 million – just a few years later they would have been worth billions.

In 1992, Apple began paying a royalty to AOL, guaranteeing $15 million over five years for the latter to get Macintosh users online. At that time, Apple's chief counsel said the deal would give AOL the funding and visibility it needed to be successful.

Peacock explained AOL UK's position to *Macworld*: "AOL is organized into separate, country-level business units operating independently of each other. If Mac OS X's installed user-base grows, it becomes economic for us to develop for the platform."

Peacock continued: "The key thing is that we watch the market very carefully, and speak with everybody all the time. Apple fully understands where we're coming from on this."

Peacock dismissed the notion that AOL's decision is connected with Apple's recent deal with ISP Demon Internet, which offers UK Mac buyers out-of-the-box Net access from the ISP.

"Mac users will wonder why we're doing this. The simple message is that we remain committed to the platform, and will be constantly revaluating our decision based on the market's future development." **MW**

Jonny Evans

Digital music ear to stay, via online

With Apple's iPod MP3 player now shipping in the UK, the state of online digital-music distribution is under the microscope. Market analyst IDC predicts fee-charging online-music providers could yield revenues up to $1.6 billion by 2005 – but success will depend on a broad content offering and consumer flexibility.

Although consumers are hungry for online music, the fate of music subscription services and pay-per-download providers is in the hands of the labels and how they choose to license their works, IDC said. Providers that do not offer content from all of the major labels will lose out, as consumers have come to expect as much music online as offline.

Top of the pops

"Consumers need to be able to get music in a place that resembles an online version of a music store, where they don't need to know which artist belongs to which label to find the music," said IDC consumer devices and technologies analyst Susan Kevorkian.

Major labels are eager to get a share of the online market, and are busy launching their own subscription services.

The other factor holding online-music providers back is flexibility. Today's labels are reluctant to let users burn CDs and move content from PCs to MP3 players. This needs to change, said IDC, if online providers want to attract and retain users.

Kevorkian said: "This is still a very young technology and it will take time for the market to develop. But the bottom line is that people love music and this is an efficient way for them to get their dose."
Scarlet Pruitt

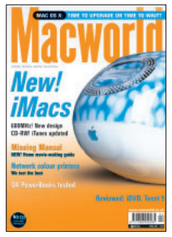
JAMES WALKER

It wasn't all Mac OS X and iBooks this year, writes Macworld News Editor Jonny Evans













2001: a digital odyssey

This third great age

2001 begins in San Francisco with a vision shared with the best-attended (93,000) Macworld Expo ever on January 9.

"The PC is not dying – it's evolving," cried Apple CEO Steve Jobs, calling the digital age the "third great age" of PCs, following those of DTP and the Net.

Jobs introduced two "digital-hub" products – iTunes and iDVD – saying: "iMovie, iDVD and iTunes are our passport into the digital arena."

Introducing the titanium PowerBook G4, Jobs said: "It's the most revolutionary portable computer ever created. It's got power and sex."

Apple added CD-RW units to many of its Macs, ("We're late to this party, but we're here now," said Jobs), and introduced SuperDrive, the first CD-RW/DVD-R drive to reach the market. Power Mac G4s reached top speeds of 733MHz for the first time.

Innovation, not recession

Apple remains committed to innovation. Launching Mac OS X on March 24, Apple CFO Fred Anderson said: "Innovation costs more, but customers say innovative products are what they want to buy. Our goal isn't to be the cheapest in the market, but the best."

"We love making things faster, enabling people to do things they couldn't do before," Jobs added.

Disappointing first-quarter results prompted a PC Data analyst to warn: "There's a dark cloud over everybody's head, but it's not like the weather-man didn't tell us it was coming."

Despite declining unit sales, Apple returned to profitability in its second quarter, staying so throughout 2001.

"Apple returned to profitability in this tough economic climate by launching innovative new products," said Jobs.





"The Mac can be the digital hub at the centre of our digital lifestyle"
– Steve Jobs, Apple CEO

Mac OS X: the NeXt generation

March 24: A worldwide clamour of users greets the international launch of Mac OS X. Jobs explains: "Mac OS X is the most important software from Apple since the original Macintosh operating system in 1984 that revolutionized the entire industry."

The Mac community responds outstandingly – resellers can't match demand. And, despite teething problems, reports are positive for the next-generation operating system. Two months ahead of schedule, Apple decides to install it with OS 9 on all Macs shipping from May 21.

"This gives our customers access to the world's most advanced operating system, and ensures a market for Mac OS X applications," said Jobs. "This is a total commitment on Apple's part; we ask the same from you. The train has left the station," he warned developers.

Developers, developers…

Apple understands the crucial importance of developers to the success of OS X. Lists of shipping products followed statements of developer support. Macromedia ships FreeHand 10; Corel releases numerous creative apps; Adobe, Illustrator 10; Microsoft, Office v. X.

September 25: Apple introduces Mac OS X version 10.1.

"Mac OS X is ready for prime time," says Jobs. "We're halfway through the transition."



This first significant update offers developers better APIs, with improved support for third-party peripherals. More stable, it integrates user feedback, including a movable Dock.

"It's incredibly fast, includes a refined Aqua interface, and has unrivalled support for more digital devices than any other operating system on the planet," said Jobs.

Released applications and a more robust iteration of the operating system has persuaded 74 per cent of *Macworld* readers to switch, according to a recent poll.

Pester power

Apple enjoyed an excellent year in the US education market, regaining ground lost in 2000, when it disasterously took its educational sales teams in-house.

In 2001, Apple VP education Cheryl Vedoe led her re-organized team to regain market prominence in the sector. iBooks sold particularly well, and Apple's March 14 acquisition of PowerSchool, an administrative solution for US educationalists, means Apple offers a complete IT solution to schools.

Jobs remarks: "The future of education is wirelessly networked notebooks. Taking learning beyond the classroom. We're working hard to deliver the best solutions possible. Education is in our DNA," he says.

Three years; Five million sales

The five millionth iMac ships April 19.

"iMac has redefined the consumer and education computer, ushering in several industry firsts including USB, FireWire, desktop movies, wireless networking, quiet fan-less operation and world-class design," said Jobs.

iMac – introduced on August 15, 1998 – is now considered long in the tooth. Predictions of flat-screen, LCD iMacs at Macworld Expo Tokyo (February) or at Macworld Expo



New York (July) prove incorrect. Apple simply improves its iMac range in July, with speeds reaching 700MHz – adding CD-RW, more RAM, better graphics and larger drives. In October, iMac gets cheaper.

Apple drops the donkey

At Macworld Expo Tokyo Apple refreshed the iMac, adding CD-RW to the line-up and introducing Flower Power and Blue Dalmatian colours – to baffled amusement. The patterns last just four months.

Aggressive price cutting, heavy marketing, designer plaudits and extra features failed to secure the future of the Power Mac G4 Cube. Apple discontinued the Cube on July 3. Phil Schiller, Apple's VP product marketing, said: "Cube owners love their Cubes, but most chose to buy Power Mac G4s instead."

Apple abandoned production of CRT monitors in 2001, introducing an all-LCD monitor line up – a market first. "The all-digital desktop has arrived," rejoiced Jobs.

The MHz wars

Apple and its PowerPC partners IBM and Motorola go on the offensive this year. Maximum processor speed available on a Mac jumps from 500MHz to 733MHz to 867MHz during the year.

Exposing the Megahertz Myth, Apple's senior VP of hardware Jon Rubinstein explained why a lower-speed PowerPC G4 processor beats the competition – by pointing out that Pentiums have to go faster just to keep up with the PowerPC, as Intel's chips include many more performance-sapping pipelines.

Pro users get the fastest, best-performing Power Macs ever, with larger hard drives, SuperDrives and an 800MHz dual-processor option. Schiller introduced the MP





"Mac is much simpler, richer, more human"
– Steve Jobs

version as: "Apple's new bad dog."

Reports suggest Motorola is soon to ship G5 processors reaching speeds in excess of 1GHz.

Shopping

May 15: Apple confirmed plans to open 25 branded US retail outlets.

"We want to convince people that Macintosh is a much simpler, richer, more human-centric computing experience," said Jobs.

Planted in busy upmarket areas, the stores aim to "capture some of the 95 per cent of the market who don't use Macs".

Queues of excited Mac fans welcomed each opening – 7,700 visited the first two stores, spending $599,000 during their first two days' trading. Excellent software sales prompt it to double the titles stocked.

"We are blown away with the numbers," said Jobs: "Customers have told us they love everything about the stores."

Apple had 16 stores open by November 5. The war against terrorism and global recession means the stores won't break even by Christmas as Apple originally expected, Anderson warned.

Your life to go

May 1: Apple introduces its "all-new" iBook. 182,000 iBooks sold by July 18. It wins recognition and support for design, utility and price. Consumers buy 251,000 iBooks in the last quarter of 2001.



Apple upgrades iBook in November.

"iBook is Apple's best-selling portable ever," said Greg Joswiak, Apple's senior director of hardware product marketing.

Apple's PowerBook G4 also gets an October upgrade. Joswiak says: "We've made the fastest portable in the world even faster."

iPod: pop in your pocket

October 23: Apple puts its digital-hub vision in the spotlight by introducing iPod. Apple's palm-sized, lightweight FireWire MP3 player carries 1,000 tracks on its 1.8-inch, 5GB Toshiba drive. The £349 device can hold data like normal external drives.

Jobs explains Apple's decision to release an MP3 player, not a PDA: "I don't think early cultures had organizers, but I do know they had music. Everybody loves it."

iPod synchronizes perfectly with iTunes – which reaches version 2.0.1. "I don't think there's another company that could create a product like this – bringing everything under one roof together."

Future…

"We accomplished a lot in 2001 – though it was a challenging year for us and our industry," opined Jobs. Executives promise "truly great" hardware and software to come.

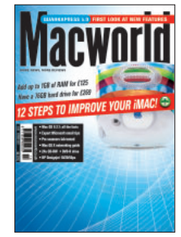
The CEO tells *Newsweek*: "Video and photography are the media of our times, but most of us are consumers, not authors."

Apple hopes to encourage consumers to use their Macs/digital hubs as a creative enablers. **MW**







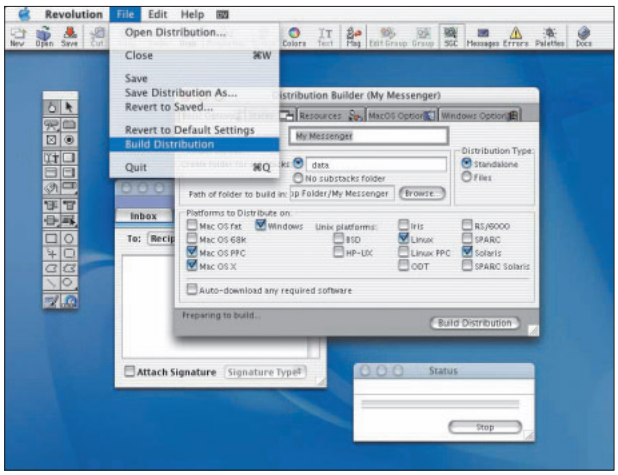






Macworld.co.uk For the information as it happens visit Macworld Online Daily News (www.macworld.co.uk)

Palmed off: Pocket PC for Mac





Revolution number X

Runtime Revolution has released Revolution 1.1 for Mac OS X, its native application-development system supporting cross-platform database access.

It lets developers create Internet-enabled applications and solutions to be delivered on Mac OS, Mac OS X, Windows, Linux, and other Unix systems. It offers "write once, deploy anywhere" support – developers can write an app on OS X and port it instantly to other platforms.

Apple's vice president of worldwide developer relations Ron Okamoto says: "Mac OS X is an exceptional development platform that delivers amazing stability, power and interoperability."

The application offers a host of Mac OS X-only features, including cross-platform access to Object Database, Oracle and MySQL databases; support for Internet protocols such as FTP; and seamless integration with QuickTime.

A Revolution Standard license starts at $349. The downloadable Starter Kit Edition is free, but limits the amount and complexity of code. www.runrev.com **MW**

If you want a handheld device that syncs with your Mac, you currently have two options: use a Palm OS device, or fiddle with adaptor cables and Connectix's Virtual PC. However, Information Appliance Associates (IAA) is about to give you a third choice: PocketMac.

PocketMac is a native Mac-sync tool that enables users to sync their Macs directly with Microsoft Pocket PC devices via USB. It supports the Classic Mac environment, with an OS X version following "shortly".

The software supports Casio and Compaq Pocket PC devices. HP is working with IAA to provide support for its devices. PocketMac-supported devices communicate with the Mac using USB.

The solution will sync with a variety of different file formats – including Microsoft Office, Excel and MP3 files. Company president Terence Goggin said: "We'd like to add syncing with Entourage and Outlook 2001. People have asked us to sync with Power On's Now Up-to-Date."

The company has also been working on a document to bring Macintosh users up to speed with Pocket PCs. This free document is available for download from **www.pocketmac.net**.

Regular, Pro and developer

Three versions of PocketMac will be available. The Regular version enables file copying/conversion, file synching, and software-installation services. This runs on OS 9 with an OS X version to come, and supports TCP/IP and USB connections.

The forthcoming Professional version offers all the Regular features, and also syncs with Entourage, Outlook (Exchange 2000), and others on OS 9 and OS X. This version is slated for November 30 release, and costs $69.95.

The Developer version offers all the features of the other two versions, and includes an API for creating custom Mac-based plugins/desktop applications that communicate with the Pocket PC using PocketMac. No price is available at this time.

The release comes as handheld-device manufacturer Palm faces stiffer opposition than ever before, including the loss of market share to Compaq's iPaq Pocket PC device, according to a Gartner Group report.

Goggin discussed the potential of the platform: "Pocket PC is more oriented toward graphics, games, and multimedia. There's even a version of Pocket Quake available. Pocket PC just seems like a more natural fit for Mac users." **MW**

Jennifer Smodish

OS X Core Audio hits its Peak

Fulfilling its promise to provide Mac OS X support, Bias has delivered Peak DV for Mac OS X. Peak is a two-channel digital-audio editing program offering multitrack mixing and signal processing. It's the first professional audio application for Mac OS X and Core Audio, the company claims.

Peak DV for OS X is a special-edition of the digital-audio editor for video, and was previously available only for Final Cut Pro users. Bias plans to release a fully working version of its other key music application, Deck, in the "near future".

Jason Davies, Bias' vice president of worldwide sales, said: "Peak DV takes full advantage of Mac OS X's advanced features such as Core Audio functionality, protected memory and the elegant Aqua user interface. Peak DV delivers superior audio capabilities, and is ideal for those working with digital video."

Core Audio is Apple's solution to free music makers and developers from reliance on third-party audio and MIDI protocols. It consists of a series of application programming interfaces (APIs) that cover the gamut of what developers require to fulfil musicians' needs. These range from low-level access solutions for particular devices, to sequencing and software synthesis functions.

Peak DV's features include fast audio-editing and processing, and support for 8- and 16-bit audio files, as well as sample rates up to 48KHz. It supports VST audio plug-ins and QuickTime. Other features include batch file-processing, unlimited Undo/Redo, and built in digital sound processing.

Peak DV costs $199. Peak 3.0 (the complete application) is expected to ship "soon". Jonny Evans

Adobe shines light on X

Adobe has announced another Mac OS X-compatible product, After Effects 5.5. The application – for creating motion graphics and visual effects for film, video, multimedia and the Web – ships in the first quarter next year.

The update adds extra tools and utilities – building on its support for 3D compositing.

Two versions are available. The standard version offers the core 2D and 3D compositing and effects tools. The Production Bundle offers these with additional keying, motion-control and distortion tools, audio effects, 3D channel effects. 16-bit per channel colour, vector-paint tools and network-rendering support.

Network video strategy

Lincoln Lopez, European product manager for dynamic media, said: "Adobe talks a lot about network publishing. We're looking at a future where video is streamed to mobile phones, PDAs and other devices."

After Effects 5.5 adds more Web tools and Flash export/import features. The application's capacity to create 3D compositions has been improved. Eight new effects have been introduced, and the application can now manipulate a composition from different perspectives using multiple views.

An Effects palette has been introduced, and the product has been made far more versatile in terms of its media-format support. It will import Flash and MPEG-1 files. The Production Bundle can also import 3D camera data, and work with 16-bit file formats.

After Effects 5.5 offers a new Metal Material option to control the colour of specular highlights – this lets users create realistic metallic logos, for example.

After Effects now ships with over 90 effects, including eight fresh for version 5.5. New effects (some exclusive to the Production Bundle), include: Color Stabilizer, Advanced Lightening, Levels (Individual Controls), four-colour gradient animations, Cell patterns, The Grid effect, Roughen Edges, and Time Difference effects.

Those upgrading from the Standard version of After Effects to the Production Bundle, or purchasing the Production Bundle get Zaxwerks 3D Invigorator Classic plug-in, which retails at $495 in the US. Invigorator can transform 2D artwork into 3D elements within After Effects.

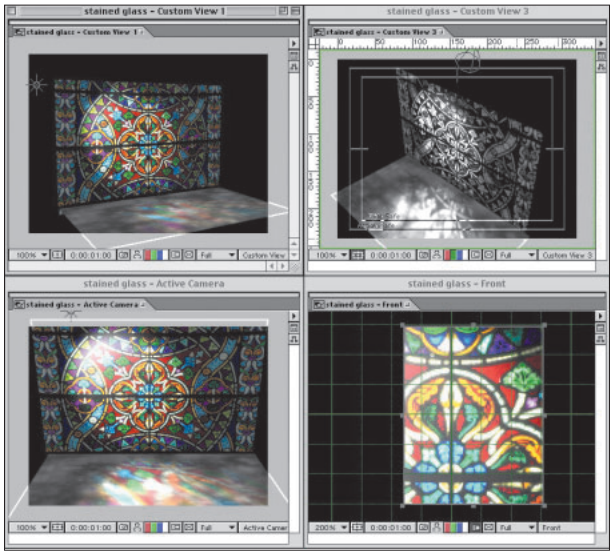
Adobe has introduced features designed to minimize one of the dullest tasks in video editing, rotoscoping. After Effects 5.5 offers the Smart Mask Interpolation Keyframe Assistant (Production Bundle feature) to assist in such tasks by automatically creating precise animated masks to speed up the process. The Production Bundle will import camera data from Maya projects into After Effects, so new elements can be added into 3D compositions. This feature also works with camera data from 3D Studio Max , importing RLA and RPF files.

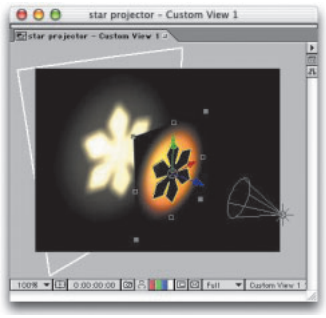
The Standard 3D Renderer now includes an anti-aliasing control to improve the appearance of output. The application offers controls that will place a layer at the current time, rather than at the position of its original In point. It's possible to speed up performance by selecting keyframes on a single layer, then pasting them to multiple layers simultaneously.

The company has uploaded five additional effects to its Web site. They include: Foam, Wave World, Caustics; Card Wipe and Card Dance.

After Effects 5.5 offers native OS X and Windows XP support. The Standard Bundle costs £525; the Production Bundle is £1,225.

Adobe recommends a fast G4 processor, Mac OS 9.1 or later, and at least 256MB of RAM. **MW**





Glass action
A stunning new feature is After Effects 5.5's coloured shadows and projection layer controls. These let users manipulate lighting in 3D compositions. The Light Transmission material property can make a 3D layer cast coloured shadows or act like stained glass. It's possible to create spotlights casting a variety of different colours and shapes, and build realistic shadows from 3D objects.

Easy video compression

Totally Hip Software has released HipFlics version 1.1, its desktop digital-video compression and processing solution, available for Classic Mac OS, OS X and Windows. The company claims that HipFlics "does for video compression what Apple's iMovie does for video editing. It allows consumers to produce high-quality video for the Web or CD quickly and easily".

HipFlics 1.1 supports drag-&-drop, and offers a timeline-based control for video processing. The interface has been designed for ease of use. It can employ multiple video-compression codecs in operation, and can handle cropping, watermarking and offers some video filters. It fully supports all the compression codecs released with QuickTime 5 – including On2's open source VP3 codec, and Sorenson Video's video 3 codec.



It costs $99.95 online. Registered users of version 1.0 can upgrade for free. **www.totallyhip.com**



IOXperts has released the first WebCam driver for Mac OS X, Mac OS X v.1 video driver for FireWire WebCams. The beta costs $14.95 and is available for download at www.ioxperts.com.

The driver supports: the ADS PYRO WebCam; the FireWire Direct DV WebCam; the Orange Micro iBOT; and iRez StealthFire cameras.

Procreate's mask force



OS X on the CD

Independent developers are creating solutions that make Mac OS X even more customizable and reflective of users' needs.

ASM (Vercruesse, www.vercruesse.de; **freeware) is a reincarnated application-switcher menu. It's customizable, and offers extra features, including: Classic Window Mode, which brings all an applications windows to the front when it becomes active; and Single Application Mode, which automatically hides all but the currently employed application.**

TinkerTool (Bresink, www.bresink.de; **freeware) allows you to change settings in Mac OS X to control antialiasing of fonts, add translucent terminal windows, display hidden files and folders, and more. Without using the command line, it offers a way to activate several preferences, such as disabling animation effects when opening files, setting the Dock position, selecting Dock animation effects, and font-smoothing controls.**

WindowShade X (Unsanity, www.unsanity.com) **brings the familiar window-collapsing effect from Mac OS 9 into Mac OS X. The utility offers three different window shade styles: window shade, make transparent window, and hide application. Registration costs US$7. MW**

Procreate has announced KnockOut 2, the latest version of its award-winning image-masking software. Procreate is a subsidiary of Corel – which claims it is now shipping "more native Mac OS X graphics offerings than any other major software vendor".

KnockOut 2 creates precise masks of complex objects in "a fraction" of the time it takes using tools supplied in dedicated image-editing applications, according to the company. It masks challenging materials, such as liquids, glass, ice, hair, smoke and fire. The application maintains the transparency and detail of the object masked.

The application/plug-in has been Carbonized for Mac OS X, and features an Aquafied user interface when run in X. The product's shortcut keys have also been improved: KnockOut now supports shortcut keys that are similar to those employed in Photoshop. This feature has also been designed to improve workflow.

KnockOut now functions as a plug-in for smoother integration into a designer's workflow, integrating with Painter 7, Photo-Paint, and Photoshop.

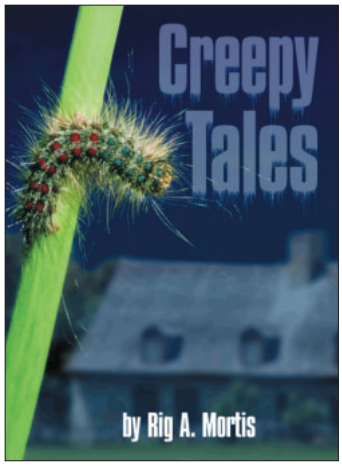
New features include improved masking tools and CMYK support. KnockOut also integrates new touch-up tools, including an eraser and brush. It supports 99 levels of Undo, and has a Revert to Last Save feature.

The Property Bar offers fast access to frequently used controls, displaying features such as Auto Complete, which automatically creates the outside selection once the inside selection of a masked object is completed. KnockOut lets users insert images in most formats as a background after processing the foreground of an image.



No bugs in version 2

The selection tools in KnockOut 2 now have a Polygon mode that lets you define selections by points or freehand. This feature has been developed to speed-up and ease the process of tracing large complex images. Other enhancements to the application include an improved zoom function. This now enables users to zoom-in on an image at predefined zoom levels using a drop-down list. The product also features automatic error-correction – it automatically recognizes errors in selection.



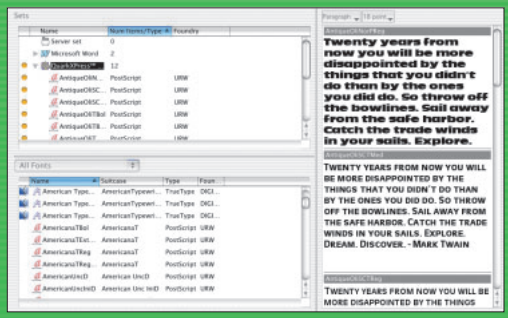
System requirements are OS 8.6 or higher (including Mac OS X) and 128MB RAM. The product will be available late November and costs £242. The upgrade cost is £97. Prices include VAT. **MW**

Suitcase 10.1 packs more for X

Extensis has released Suitcase 10.1, the Mac OS X-compatible version of its font-management software. Suitcase will group and open fonts only when needed, using a control strip. Version 10.1 is a free download for registered users. OS X 10.1 users get extended font-management facilities: OS X can manipulate multiple font directories; with Suitcase 10.1, users can manage all such directories simultaneously. It also adds support for OpenType and TrueType fonts.

The application offers improved font-conflict handling; such conflicts can be opened and dismissed with a single click. A new dialog feature shows the information needed to decide whether fonts should be kept or made active.

Suitcase 10.1 supports Mac OS 8.6-9.2.1 and Mac OS X 10.1 and above. Suitcase 10 costs £69.95. Upgrades from previous versions are £34.99; competitive upgrades cost £29.99. Suitcase 10 Server is also available for £699.99. MW



New techs pepper Comdex



"I give credit to Microsoft for keeping a straight face" – Larry Ellison, Oracle CEO

US DoJ settles with Microsoft

Oracle CEO Larry Ellison spoke out against the US government's settlement deal with Microsoft at Comdex, calling it: "A complete victory for Microsoft and complete failure for the government".

"It's a bit like being a bank robber caught on videotape, with the government saying, 'Oh go on, what the hell'," he observed.

"I give credit to Microsoft for keeping a straight face," he said, "It's very magnanimous in the face of complete victory."

His remarks follow November's agreement between the US Department of Justice, Microsoft and nine of the 18 states involved in the antitrust case against the company.

Critics of the deal have said the software maker was lucky to have reached a settlement that calls for mainly behavioural constraints. The case has now been split into two tracks: one for the nine states who did not participate in the settlement, and one to review the proposed settlement. MW



Tiny disks set for music
DataPlay appeared, promising its eponymous storage media would ship in the first quarter 2002. The media will cost from $5 and hold 500MB on a tiny, stamp-sized cartridge. Major music labels are reportedly preparing to publish music on such disks.



FireWire hits 120GB, CD-RW 32x
Comdex saw several announcements of interest to Mac users, including QPS's 120GB Que! M3 UltraSlim, a 7,200rpm FireWire hard drive. It also introduced a 32x CD-RW drive, available in either FireWire or USB 2.0 configurations. Maxtor showed its 80GB Personal Storage 3000DV (above), an external 7,200rpm FireWire hard drive



Tablet PC
Gates showed Acer's forthcoming all-in-one tablet PC that will run a specialized version of Windows XP. Toshiba, Compaq and Sony are developing such tablets. Industry opinion is split. Some manufacturers are unconvinced that launching such products in a downturn will achieve results. Dell, IBM, Gateway and Hewlett-Packard will not make tablets yet. Pamposh Zutshi, Dell's director of marketing, said: "We don't believe Tablet PCs are ready for prime time."

Comdex is the largest IT event in the US calendar. Despite the stress on Windows XP and a keynote speech from Microsoft's chief software architect, Bill Gates, the show gave insight into hot industry topics.

Wireless networking solutions abounded, particularly focused on the IEEE 802.11b (Wi-Fi) standard employed by Apple in AirPort (see pages 24-25). Next-generation 802.11a products were also visible at the show. These support data-transfer rates of 20-25Mbps, as opposed to b's 11Mbps. However, transmission through walls is not as robust as with 802.11b, and existing Wi-Fi networks would require reconstructing. Proxim showed (802.11a) SkyLine devices. Macintosh users saw demos of Troy Wireless' EtherWind, a wireless print server. The £287 device lets multiple users share printers over wireless networks. It supports AppleScript, and works with AirPort.



Travelstar hits 60GB
The Travelstar 60GH has 60GB of storage capacity at 5,400 rpm – making it, according to IBM, the highest-capacity, highest-performing 2.5-inch notebook drive on the market.

Promising lower phone bills, Voice over Internet Protocol (VoIP) solutions appeared, with pundits declaring them ready for the mass market.

HyperTransport is a fast point-to-point link for integrated circuits. It provides a universal connection between them, reducing the number of system buses – so improving system performance. Apple sits on the HyperTransport Consortium managing the specification. Other members include NVidia, AMD and Sun. The technology appears likely to emerge within future computers. Unsubstantiated rumours claim Apple is using HyperTransport in early evaluation units of future desktops.

The USB Implementers Forum supported **USB 2.0**, which offers transfer speeds of 480Mbps, against USB 1.1's 12Mbps.

400Mbps FireWire is reaching critical mass. The 1394 (FireWire) Trade Association is working on IEEE1394b (**FireWire 2**), raising transfer speeds up to 1.6Gbps, with plans for 3.2Gbps in the future.

NVidia announced its newest mobile graphics-processing unit, codenamed NV17M. Built on a Mac-compatible chip, it offers better power management, an integrated video-processing engine, antialiasing technology, and an ultra-efficient memory architecture. Mac release plans were not discussed.

ATI demonstrated the All in Wonder GPU. This product is "ready" for Mac OS X development. It can place a semi-opaque video feed under a Windows XP desktop – meaning Macintosh users could watch video on their OS X desktop through semi-transparent application windows one day. ATI has received many requests to bring it to the Mac. **MW**

Jonny Evans

IBM's Pixie Dust for 400GB disks

IBM has announced new hard-disk products, the 120GB Deskstar 120GXP, and 60GB Travelstar 60GH. Both include its magnetic-coating technology, nicknamed "pixie dust".

Announced last May, the technology (officially called antiferromagnetically coupled (AFC) media), works by putting a three-atom-thick layer of Ruthenium (Ru) between two magnetic layers on a disk. It lets hard drives store four times as much data per square inch of disk as before.

The company predicts its hard-disk capacities will reach 100GB per square inch by 2003, promising 400GB desktop hard drives and 200GB notebook drives later.

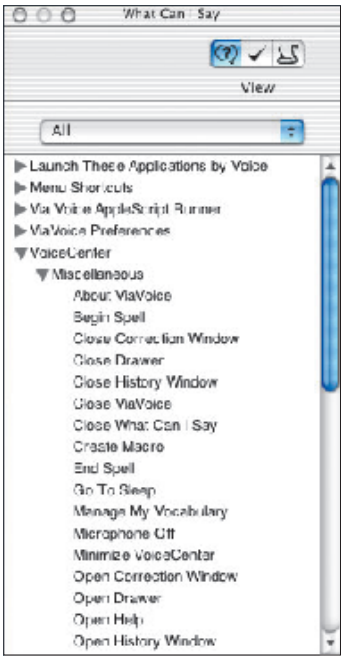
The new drives have begun shipping already. Fujitsu is also using similar technology, and expects its first product to debut in the first or second quarter 2002. Manufacturers such as Maxtor and Seagate are not introducing new technologies, preferring instead to refine existing ones in order to provide better storage capacity.

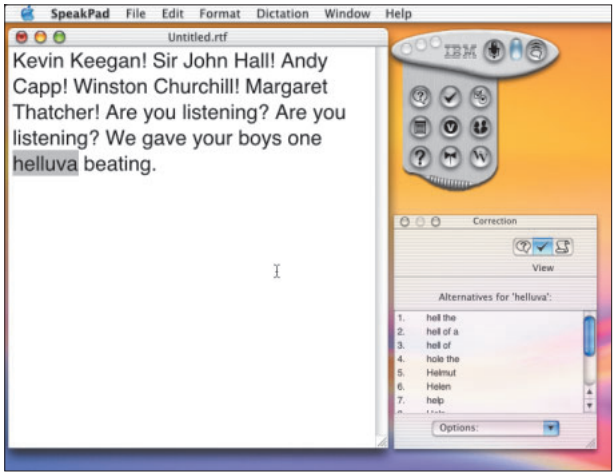
IBM's Deskstar 120GXP features a 3.5-inch desktop drive with a 120GB capacity and a speed of 7,200rpm.

Laura Rohde



IBM: It's good to talk





The Macintosh user in the booth next to you may not be muttering to himself, but using speech-recognition and dictation application, ViaVoice for Mac OS X Edition from IBM, which is now shipping.

ViaVoice was announced at July's Macworld Expo New York – where it won a Macworld Best of Show and was featured in Apple CEO Steve Jobs' "10 on X" keynote speech. The first public opportunity to see the revamped application taken through its paces was at MacExpo 2001 at London's Business Design Centre.

Following Jobs' keynote speech, IBM's Toby Maners, segment manager of IBM Voice Dictation and Pen Systems, said: "IBM is committed to continue developing and delivering award-winning speech solutions for the Mac OS X platform."

Enrolment procedures

There are a number of significant improvements within the application. Faster enrolment speeds-up the process of creating a personal Voice Model. Enrolment is the process by which users train their copy of ViaVoice to understand what they are saying.

It offers a 150,000-word vocabulary. Simon Cocheme, IBM's UK software marketing manager, said that IBM's own research showed that, on average, people exploit 12,000 words as standard.

It's possible to teach ViaVoice an additional 64,000 words. The product also contains a variety of foreign words, commonly employed in UK English, and understands some UK slang expressions.

Cocheme explained that, to build recognition for regional variations in UK English, IBM took a sample group of 850-900 people from different UK regions. "They were chosen to read set text into the application. As you train your copy of ViaVoice, the software can better determine a user's unique speech patterns."

There are also improvements to VoiceCenter, Command Center, SpeakPad, and the Preferences features. The application is faster than before, IBM claims.

There's a redesigned VoiceCenter, new Command and Preference Centers, and even G4 processor and multiprocessing optimization.

The application can analyse existing text documents. This lets ViaVoice build a model of how its users write, which helps it become more accurate when it transcribes a user's dictation.

ViaVoice also makes it possible to navigate the Web and Finder by speech.

IBM's ViaVoice ships with a USB headset microphone, and costs £99.99 (inc. VAT). Upgrades cost £49.99. **MW**

iPod for Windows

Mediafour, a cross-platform solutions developer, is bringing Windows compatibility to Apple's recently launched digital MP3 player, iPod.

Xpod, is intended to make the product compatible with Windows Me/98/NT 4.0/XP.

When iPod was launched, Apple CEO Steve Jobs revealed that the company plans to create a solution to bring iPod to Windows, but suggested there could be a wait till it ships – which has turned into an opportunity for this enterprising software developer. iPod is available in the UK now, and costs £349 (including VAT).
www.mediafour.com

UK emails kept to catch terrorists

Following the September 11 attacks on the US, the UK government sent a request to all UK-based ISPs (Internet Service Providers) and telecoms companies asking them to retain all communications-traffic data for a month.

The Home Office is pushing the Anti-Terrorism Crime and Security Bill through Parliament. It grants the Home Secretary power over individual's Web-based communications.

Part 11 of the bill, the Retention of Communications Data, aims to "safeguard national security" by granting the Secretary of State the power to order ISPs to hold data communications for a set period, or risk being jailed.

When the government initially requested the retention of data in September, it did do on a voluntary basis under the Data Protection Act, which usually prevents these same companies from saving traffic data for longer than a month and for any reason other than billing purposes.

Should the Anti-Terrorism Crime and Security Bill become law, requests from the government for information such as IP (Internet Protocol) addresses and information on individual emails, such as size, destination and author, would be legally binding.

The bill is expected to hit stiff opposition from MPs including Chris Mullins, the chair of the Home Affairs Select Committee. He expressed concern in a report presented to the House of Commons that the bill, which has major human-rights implications, is being pushed too quickly through Parliament

The government made its initial request for data retention through the National High-Tech Crime Unit, which said it needed to preserve data in case the FBI needed it in its investigations into the terrorist attacks.

The US Congress is drafting similar legislation, but current bills before the House and Senate, such as the Critical Infrastructure Information Security Act, wouldn't grant the US government the sweeping extent of powers being sought by the UK government, according to Mullins.
Laura Rohde



Myth junked

Mumbo Jumbo, the game-development studio that created the real-time strategy game Myth III: The Wolf Age, has laid-off its Myth III development team.

The move, reported by Gamespot.com, is part of the company's move to close its Californian office in order to centralize operations in Texas.

The development team has been laid off because the company had no other projects lined-up for the team. Reports suggest that some of the team have been able to find alternative employment, with some moving to MacSoft and others returning to previous companies.

Myth III is available now, costs £39.99, and is distributed by Softline (01883 745 111).



Harry Potter's Mac magic

On the same day that Harry Potter and the Sorcerer's Stone is released in cinemas across the world, Mac game publisher Aspyr Media announced plans to publish a Mac version of the computer game based on the enormously popular book series and the new motion picture.

The Harry Potter and the Sorcerer's Stone game has recently been released for the PC by Electronic Arts. The Mac version of the game is currently in development at Mac game-conversion company Westlake Interactive. In a recent conversation with MacCentral, Aspyr said they hope the game will be released in time for Macworld Expo San Francisco, January 8-11, 2002 – less than two months following the PC game's introduction.

Aspyr also extended "a big thank you" to Electronic Arts for allowing them to license the game.

Aspyr president Michael Rogers commented: "We are all big fans of JK Rowling's work and look forward to seeing this magical adventure."

Harry Potter and the Sorcerer's Stone is built on the same core technology that powers Unreal Tournament – it's a full 3D action game, tailored specifically for fans of the books and movie.

In the game, you are Harry Potter, learning to master all things magical in a world filled with wizardry, fun and danger. The entertainment adventure begins as Harry Potter arrives at Hogwarts School of Witchcraft and Wizardry.

Players explore Hogwarts while solving puzzles, casting spells, battling foes and uncovering secrets. They journey from Privet Drive to Hogwarts, and sneak, climb and jump as you explore 3D environments.

Players must battle evil creatures using all of Harry's abilities. Learn to fly on a broomstick, and play fast-paced, arcade-style Quidditch. They can uncover special items including the Invisibility Cloak, wizard sweets, potion ingredients, Chocolate Frog Famous Wizard Cards and broomsticks.



Spell checker

Players interact with over 20 characters from JK Rowling's magical world. With Ron and Hermione at their side, players cast spells and confront adversaries to thwart You-Know-Who's evil plans.

Aspyr noted that system requirements won't be finalized until the game's release, but has offered some tentative system specifications. Harry Potter and the Sorcerer's Stone will require Mac OS 9.x or Mac OS X 10.1; G3/333MHz or faster, or G4; ATI RAGE Pro or NVidia GeForce-based video graphics system or better with 8MB or more video memory; 64MB of built-in memory with virtual memory set to at least 160MB. **MW**

Peter Cohen

Online turns up heat on telly

Quantic Dream (**www.quanticdream.com**) has announced that the world's first real-time, interactive television series – Fahrenheit – will reach the Mac in early 2002. Released in monthly episodes, the game has a story running from one episode to the next. All the action takes place online.

Quantic Dream's CEO David Cage said: "We want to enrol a new audience by offering something entirely beyond what people normally expect of a computer game. To achieve this, we have given special attention to the quality of the acting, storytelling and directing.



Paranormal adventure

"We really wanted to create virtual actors, moving naturally, interacting with the sets in various and complex ways – acting like a real actor would."

Players are able to play all the game's characters – becoming both the hunted and hunters in this paranormal thriller set in Manhattan. Players influence game play depending on their actions.

Lead character Lucas Kane becomes a psychotic killer. Troubled by apparitions, he kills his first victim unprovoked in a restaurant toilet. Inspector Carla Valenti and team-mate agent Tyler Miles head the murder investigation. Kane needs to anticipate the police's actions to evade capture. The game features a cast of over 20 characters.

Fahrenheit uses Quantic Dream's proprietary ICE technology, which integrates a 3D engine and tools for creating complex sequences that mix animation and cameras in 3D real time. The project has been driven, "by a desire to combine cinema and interactivity, technology and the pleasure of playing," according to Paris-based Quantic Dream.

Optical motion capture

In development for 18 months, Quantic Dream claims that Fahrenheit is the world's first real-time 3D game entirely animated using optical motion capture – Vicon's MCam is a million-pixel high-speed video camera built for optical motion capture.

Quantic Dream's 40-strong project team created new techniques for integrating motion-captured animation into real-time 3D environments. The team also created a new style of interface for managing interactivity, and a new conceptual framework for interactive storytelling. CDs of the game can be bought every month, or downloaded online for under £10. Official pricing and distributions details remain unconfirmed. **MW**

Dominique Fidéle



Does whatever a spider can

Spider-Man is webbing his way to Mac OS X this month. Based on Stan Lee's renowned comic book for Marvel comics, the £35 game stars unlikely high- school hero Peter Parker. Bitten by a genetically mutated spider, Parker acquires the superhuman powers of sense, agility and strength.

He begins a crusade to crush his evil foes, including Green Goblin, Scorpion and Rhino. The Mac version of the title has been in conversion for five months, with head programmer Mark Krenek of Westlake Interactive guiding the project. The Mac release is expected this month.

Aspyr's director of PR and marketing, Amy Torres said: "Aspyr chose to bring Spider-Man to the Mac for several reasons; Spider-Man has a great story line, and is rooted in the Marvel Comic series.

"We are honoured that publisher and developer Activision allowed us to license this title from them. We chose Westlake Interactive to do the port because they do fabulous conversion work for the Mac. Krenek also converted Tony Hawk's Pro Skater."

The plot is the stuff of comic-book action. While at a science exhibition, Parker witnesses a fake Spider-Man steal a device.

To make matters worse, super criminal Venon also spots the theft



– and both super humans chase the imposter through the city. The single-player game's meticulous 3D environments are inspired by the movie, to be released next year by Columbia Pictures. Softline, 01883 745 111

Aliens fiXed

Developer MacPlay has released a patch to fix a hitch running **Aliens versus Predators Gold** on Mac OS X 10.1. The game doesn't work on the latest upgrade to OS X, despite MacPlay testing it on all Mac OS platforms including Mac OS 8.6, Mac OS 9.2.1, Mac OS X 10.0.4 and late betas of Mac OS X v10.1. MacPlay has notified Apple of the issue, and created a patch to address the problem that can be downloaded from www.macplay.com/support

MacLine 'lacked financial muscle'

Business briefs

- Apple has no plans for a major share buy-back, said vice president of finance and corporate controls Peter Oppenheimer at a Prudential technology conference: "It's in our best interest to maintain our cash balance," he said. Apple lost $50-75 million in sales from the September 11 attacks, he said.
- Adrenaline Software, publisher of Adrenaline Charts Pro 1.5, has ceased trading, citing "difficult market conditions".
- Adobe has lowered its Q4 revenue projections, and announced that it's cutting 150 jobs (5 per cent of its workforce). It now expects to return revenues between $275-285 million. It originally forecast revenues of $310-$320m. Adobe blames the economic impact of the September 11 attacks.
- Graphics-card developer NVidia reported record third-quarter fiscal-2002 revenues, returning $370.2 million, compared to $198.2 million for the year-ago quarter. Actual net income was $4.7m, compared to $28.1m a year ago.
- Global demand for semiconductors will recover next year, following 2001's sharp decline, Dataquest claims. The analyst firms believes an improved economic environment will drive growth.
- Storage manufacturer SmartDisk returned third-quarter 2001 revenues of $17.3 million, compared to $32.7m for the same quarter last year. It had expected revenues of $23-25 million. Operating loss was $3.7 million. The cause? The "poor economic outlook exacerbated by the September 11 attacks".
- Extensis has sold its creativepro.com Web site to Printingforless.com. Creativepro.com was launched in 1999 by Extensis as a portal for online content and resources for the print and Web publishing communities.

Cancom has acquired MacLine, the popular Cambridge-based Apple reseller. This follows MacLine calling in official receivers Begbies Traynor after its credit insurance was cut, making it impossible for the company to keep trading. Credit-risk insurers Euler Trade Indemnity (ETI) cut the rating.

Credit-risk insurance provides trading companies with protection against bad debt. ETI chose to reduce the amount of risk it would accept, leaving MacLine with inadequate trading capital to stay in business.

ETI spokeswoman Rebecca Kools said: "The events of September 11, plus the general decline in economic activity, both globally and in the UK, mean that all credit insurers are examining their premium levels and exposures. This prudent management of risk applies as much to the electronics sector as any other."

Cancom said the business was "up and running" immediately, with "no disruption to services at all".

Back in business

Cancom plans to re-open MacLine and continue to service the local Mac community.

Cancom managing director Max Wright said: "Following last month's acquisition of Mygate, the addition of the MacLine business enables us to further expand our base of top-quality AppleCentres, and be able to service the Cambridge and East Anglian areas as well".

Wright suggested that further acquisitions are "in the pipeline".

"Our goal is to become the number-one Apple Reseller in the UK," he told *Macworld*.

Cancom's UK presence comes from its acquisition of Multiple Zones last year. At the time, Wright, founder of Multiple Zones, told *Macworld*: "I think the writing's on the wall for mid-range retailers. You have to be small and niche-orientated, or grow."



Financial muscle

Discussing MacLine's collapse, an industry insider observed: "It's another case of a company that can pull together a good marketing campaign, but lacks the systems, infrastructure and financial muscle to truly compete with larger concerns.

"The people to blame aren't just the company, but also the suppliers, distributors and credit-insurance companies that let smaller resellers over-extend themselves without considering customers' needs.

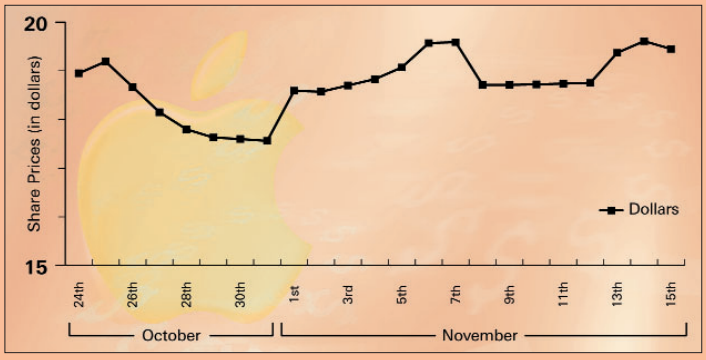
"MacLine lacked the necessary financial muscle to survive."

A MacLine source told *Macworld:* "The takeover is beneficial to us, because Cancom is a bigger company, so there's less risk. We can now take advantage of lower buying prices."

MacLine commenced trading in the UK Macintosh market in the 1980s, and was one of the first UK mail-order Mac companies.

With the disappearance of MacLine and Mygate (see Business News, previous issue), only a handful of players remain in the UK Mac market. These include Cancom, Computer Warehouse, Gordon Harwood, Jigsaw, MacWarehouse and Micro Anvika. MW

Jonny Evans



Apple sued over 'false claims'

Apple legal faces major challenges this month. Three class actions alleging Apple issued misleading financial information have been filed in recent weeks.

Angry investors claim that Apple and its officers issued false and misleading statements regarding its business and finances. The company is charged with having claimed the product-development cycle (for iMac, Power Mac G4 dual-processor and G4 Cube) was complete, ready for mass production, and would be available in quantity.

Apple claimed it expected strong revenues in its fourth 2000 quarter and the first quarter 2001. Its stock climbed to $64, at which point four company officers sold $22 million worth of stock. Just 20-25 trading days later, Apple revealed a huge revenue shortfall; following which its stock fell as low as $13, wiping $10 billion off its market share.

Four such class actions seeking damages now exist. Apple's legal advisors face teams from: Cauley Geller Bowman & Coates, Charles Piven, Milberg Weiss and Schiffrin & Barroway.



Perfect fit
The 1.75-inch FSV-E1 file server is designed to fit in standard 19-inch racks, or to take up minimum desktop space.

Plenty in store from Sony

Sony has released the StorStation FSV-E1 file server and the Advanced Intelligent Tape (AIT) library. The £787 FSV-E1 measures 430-x-4-x-381mm. Equipped with 80GB of capacity, it's easily integrated into networks, Sony claims. Configuration and management can be controlled remotely through a Web browser-based administration tool, or directly through the unit's built-in LCD panel.

The StorStation FSV-E1 handles several streams including motion pictures and sound files at the same time. It supports TCP/IP, IPX and Apple network transfers.

The AIT library measures 430-x-88-x-680mm. Data-transfer rates can reach 112GB per hour and the drive is hot-swappable. There is a replacement power supply and dust filter which improves the unit's serviceability, according to Sony. Two models are available. The first comes with an AIT1 drive for £6,159. An additional drive is available, but the price has not been set.

The AIT2 option costs £7,699, and an additional drive costs £2,130. AIT1 drives have a storage capacity of up to 1.456TB while AIT2 drives store up to 2.08TB.

Sony, 00800 2623 7669

PDRs in the frame



The PDR-M11 and the PDR-M21 are the latest digital cameras in Toshiba's range. The PDR-M11 has a 1.3-million-pixel CCD image sensor and a maximum resolution of 1,280-x-960 pixels. It's supplied with a 4MB SmartMedia memory card that holds up to 77 images.

The PDR-M21 features a maximum resolution of 1,600-x-1,200 pixels. Its six-element auto-focus lens creates colour photos with sharp details and crisp edges, Toshiba claims. The PDR-M21 comes with a 8MB SmartMedia card.

Both models have a silver casing. They can be hot-swapped and plugged into a Mac for fast downloading. The models have an all-glass lens, a 1.8-inch colour LCD monitor, a 2x digital zoom and an optical viewfinder to capture pictures.

Other features on the cameras include a five-mode flash system with a range of up to 96 feet, auto/manual white balance, and fast circuit for quick booting and reduced processing time between shots. The PDR-M11 and the PDR-M21 are priced at £199 and £249 respectively.

Toshiba, 08704 424 424



M for music

Glyph Technologies is shipping M Project, a FireWire hard-drive-storage solution for MOTU (Mark of the Unicorn) systems. Compatible systems include: Digital Performer, a MIDI and audio-sequencing production system; AudioDesk, a multitrack digital-audio software; and audio interface FireWire 828. M Project is a 1.75-x-13-inch deep rack-mountable AC-powered hard-drive enclosure. Three models are available: the single-drive 40GB version costs £439; the single-drive 70GB is priced at £545; while a dual-40GB drive is also available for £569.

The Global Distribution Group, 01799 584 925

Yamaha drives motors on

Yamaha has released the CRW3200E series of high-speed CD-RW drives. Each drive has speeds up to 24x writing, 10x rewriting and 40x reading. There are four models in the series: the £154 CRW3200E-VK features an internal drive with IDE connectivity; the £230 CRW3200ESX-VK is an external SCSI drive; the £264 CRW3200IX-VK is an internal FireWire drive; and the £229 CRW3200UX-VK external USB 2.0 drive.

Yamaha, 00800 9262 4222



PDFs without Acrobat

PrintToPDF creates PDF files without requiring the full Acrobat package. It will create bookmarks and subsection headings, and URLs will become hot links. PrintToPDF is not as powerful as Acrobat, but it creates simple PDFs for $20.

Jim Walker's Software, www.jwwalker.com

Softchaos brings order

Softchaos has released WorkStrip 1.5, which organizes applications and remembers previously opened documents and applications. It also previews files instantly.

One of WorkStrip's key features – Workspaces – aids file-tracking and Internet activities, gathering them into groups. New features in the £21 WorkStrip 1.5 include instant previews of sound files (including MP3), QuickTime movies, Flash animation and HTML files. WorkStrip 1.5 also bookmarks Web sites, and exports all or part of a Workspace to other machines.



There are plans to release a Mac OS X version later this year. A 30-day trial of WorkStrip 1.5 can be downloaded. All upgrades are free.

Softchaos, 020 7434 0775
www.softchaos.com

VCD solution

VCD Player 1.5.3 is for machines running pre-OS X software, and plays Video CDs on a Mac. The application remembers stopping points, offers audio controls and can optimize images. It costs $10.

Johnny Lee, www.johnnylee.com

Print from Web

WebPrint Plus collects, saves, annotates, and prints information in almost any program. It eliminates printing problems and speeds up printing from a Web browser, according to makers MacEase. Registration costs $29.95.

MacEase, www.kagi.com/MacEase

continues page 46

Apple updates

Apple has launched a gamut of updates this month.

The **Power Mac G4 Firmware Update 4.2.8** fixes audio problems generated by update 4.1.9's installation on G4 Power Macs running Mac OS 9.1. The **WebObjects 5.0 update 3** corrects incompatibilities between WebObjects 5 and Mac OS X 10.1. **Ethernet Update 2.0** improves AppleShare connections in high-traffic network environments. The **CarbonLib 1.5d5 SDK** (Software Development Kit) is the latest pre-release version of the kit for the developer community. **Developer Tools for Mac OS X 10.1** is available for download from the Apple Developer Connect area of its Web site. Visit www.macworld.co.uk/updates for links to the updates.

Third-party updates

Cubase VST 50r2
This update for Steinberg's professional music-recording system adds support for new peripherals. It also optimizes VST automization.

Keyspan updates
Keyspan has released the final versions of its Mac OS X drivers for serial adaptors. These include the company's USB Twin Serial Adaptor, USB PDA adaptor and more.

Media 100i 751
This update makes the streaming-media-production application more stable. Media 100i synchronizes other events on a Web page, such as opening URLs while a video is playing. It makes it possible to create broadcast quality interactive video.

MacDraft 5.0.5 updater
This fixes a number of bugs in Microspot's CAD application. The update improves stability, and the handling of polygons, polylines, links and dimension objects is improved.

TechTools Pro 3.0.5 Updater
TechTools Pro is a repair application for Macs. It optimizes performance, checks System integrity and finds bugs that cause Macs to crash.



Web watching, FireWire-style

iRez has launched the KritterDigital FireWire webcam. It comes in a translucent graphite enclosure. Because it uses FireWire, it offers 16 times the data-transfer rates available to USB-based webcams. The £175 product ships with a stand and a two metre long FireWire cable. It also comes with Reel-Eyes video-editing software, and the iSpQ video-chat application. Controls include auto/manual brightness, exposure and white balance, manual focus, zoom, iris, backlight compensation, sharpness, saturation, and gamma. The camera is recommended for use with at least OS 9.x, A G3 processor, and 64MB of RAM.
AM Micro, 01392 426 473

Winter blues away



LaCie has added two monitors to its electron range – the electron19 blueIII and electron22blueIII.

The electron19blueIII monitor sports a 19-inch tube and an 18-inch diagonal viewing area. It has a maximum resolution of 1,600-x-1,200 pixels at 76Hz.

LaCie's electron22blue III monitor features a 22-inch tube and a 20-inch diagonal viewing area. It has a maximum resolution of 2,048-x-1,536 pixels at 80Hz.

Based on Diamondtron Natural Flat aperture-grille tubes, both monitors supply sharp, bright images with vivid, accurate colours, according to LaCie.

The electron19blue III monitor is priced at £339, and the electron22blue III monitor £749. The monitors come with a blue hood, a video cable with a Mac adaptor, and a three-year replacement warranty.

There is an optional USB Blue Eye hardware calibrator with the electron22blue III monitor, priced at £349. £50 will be knocked off the 22-inch monitor when bought with Blue Eye. It adjusts each electron gun in the monitor to reach optimum settings. After this adjustment, the Blue Eye generates a ColorSync profile that can be used in almost any video, animation or content development application.

LaCie has also launched a range of hard drives and CD-RWs. The hard drives will ship in 40, 60 and 80GB capacities; priced at £169, £209 and £249 respectively. Two CD-RWs will be available at 16x-10x-40 and 24x-10x-40 speeds, priced at £159 and £199 respectively.
LaCie, 020 7872 8000

Scan-tastic 4800

Microtek has released the ScanMaker 4800 scanner, which offers an optical resolution of 1,200-x-2,400dpi. It has colour depth of 48 bits, which is combined with Microtek's Dynamic Colour Rendition technology to deliver "realistic results".

The scanner uses Microtek Sigma-Six technology, which incorporates a 20,000-element CCD for high levels of detail and accuracy, according to Microtek.

A built-in OCR utility scans and saves printed documents to an editable text-format in Microsoft Word or to a PDF (Portable Document Format) for document management and sharing. Equipped with a built-in 16-bit Analogue-to-Digital Converter (ADC), the ScanMaker 4800 converts originals into digital images with precision, according to the company.

It features five buttons that are programmed to scan, email, copy, OCR and scan-to-Web.

Microtek claims its ScanWizard 5 software, which is bundled with the 4800, is a versatile scanning tool that selects between Standard and Advanced controls to suit expertise and experience. It also enables batch scanning. The £126 ScanMaker 4800 comes with Adobe Photoshop LE.
Johnsons Photophopia, 01782 753 300



InFocus in the loop



InFocus has released the InFocus LP280 projector, which delivers a brightness of 1,000 lumens, and an SVGA resolution. It features a monitor loop-through that shows the image to be viewed on a monitor and projection screen simultaneously. A soft-power feature allows the projector to be ceiling-mounted and turned on and off via remote control. The projector features a short projection lens, and weighs 5.7 pounds (2.6 kg). It costs £1,500.
InFocus, 0800 028 6470

HP printer a Mac icon



Hewlett-Packard has released two new inkjets – the cp1160 and the wide format cp1700. The cp1160 delivers printing speeds of 17ppm in black and 16ppm in colour, the company claims.

It has an automatic duplexer for double-sided printing and a removable 150-sheet paper tray with an optional 250-page paper tray for increasing paper capacity to 400 sheets.

It prints at 2,400-x-1,200dpi on photo paper. The printer has an icon-driven LCD panel, ink-level indicator and print cancel button. The printer uses smear and fade resistant ink, according to HP. The £226 cp1160 provides USB and parallel connectivity, and an optional HP JetDirect internal printserver for up to three users. IR technology enables the wireless connection of mobile devices.

The cp1700 inkjet printer prints at speeds of 16ppm in monochrome and 14ppm in colour. It prints on a variety of media from A5 through to A3+ and banner printing.

There are three versions of the cp1700: the base model costs £337, the £470 cp1700ps supports Adobe PostScript 3 software RIP solution, and the £434 cp1700d ships with a duplexer. All feature an LCD display and a paper-type sensor.
Hewlett Packard, 08705 474 747

Four-colour printing
The cp1700 features a Modular Ink Delivery System that uses four ink cartridges – each with an individual printhead.

Read Macworld's review of these printers on page 61.

CRTs out for Xmas



NEC Mitsubishi has recently launched two monitors – the Pro740SB and the FP1375X. The £195 740SB is a 17-inch flat-screen CRT monitor.

The 740SB has a grille pitch of 0.25mm, and a recommended resolution of 1,024-x-768 at 85Hz. The maximum resolution is 1,600-x-1,200 pixels at 50 to 76Hz. The monitor measures 399-x-413-x-415mm.

It has a self-diagnosis circuit that displays technical problems on-screen. The monitor has a three-year warranty, and a 24-hour on-site service with the option of replacement or collection for repair.

The FP1375X is a 22-inch CRT monitor. It uses Ambix technology that handles digital or analogue signals. The display has an active display area of 51cm based on the new, optimized Diamondtron Natural Flat (NF) picture tube with a 0.24 mm grille mask.

The FP1375X has a recommended resolution of 1,600-x-1,200 pixels at 85Hz, and a maximum resolution of 2,048-x-1,536 pixels at 80Hz. The monitor measures 495-x-493-x-473mm.

Adjustments can be made through control functions, user controls and a self-diagnosis circuit. The monitor costs £645 and has a three-year warranty, and 24-hour on-site service.
NEC-Mitsubishi, 08701 201 160

Eye strain
The Pro740SB has a non-reflective coating to protect users' eyes.

Web design spins out

PageSpinner 3.1.2 from Optima Systems is a WYSIWYG HTML editor designed for Web-design novices. The application also includes features for professional designers, such as the manual entry of HTML code.

Version 3.1.2 has a set of tools for automatic Web-site creation. It supports AppleScript, so site administrators can automate the updating process.

AppleScript-based software kits for publishing information from applications such as FileMaker Pro, 4D and Eudora are included in the package.

PageSpinner has an open architecture for plug-ins, and supports Cascading Style Sheets (CSS), PHP, Java, JavaScript, XML and Embedded Objects.

This version has an updated database publishing kit that supports AppleWorks 6. PageSpinner also enables batch printing of collections of HTML pages. Work is in progress on a Mac OS X version. It costs $29.95.
Optima Systems, www.optima-system.com



Money spinner
PageSpinner 3.1.2 offers a floating preferences palette, and support for Edit Tag Appearance plug-ins from Cyrk.

iSlideShow released

RealMac has launched iSlideShow 1.2 for creating slide shows for multimedia projects, Web pages and presentations. The upgrade supports Mac OS X and OS 8.6-9.2. Features include a presentation mode to display movies at half, normal, double, triple or full screen. There are over 65 transitional effects, and a live preview of slideshows when exporting. It costs $10.
RealMac, www.realmacs.co.uk/register.html

Smart photo printing



Hewlett-Packard has launched the hp photosmart 100 photo printer. It prints 10-x-15cm photos from digital cameras. The £109 device prints from almost any digital camera, using built-in readers for CompactFlash, SmartMedia or Sony Memory Stick cards.
Hewlett Packard, 08705 474 747

Type casting

TransType 2.0 converts Type 1 and TrueType fonts between Mac and PC. The application conducts the translation with full respect to code pages, encodings, font suitcases, bitmap fonts and other features specific to the relevant platform. It enables batch conversion of fonts. It costs $97.
FontLab, www.fontlab.com

Movie distribution

Adaptec has launched DVpics Plus, a digital-video solution that views and shares home movies on Macs and most standard DVD players.

It's equipped with a home-DVD creation kit from Adaptec that includes a three-port FireWire PCI card and cable for plug-&-play to DV camcorders and other FireWire-enabled devices – including hard drives, CD-R/RWs and scanners. The £65 software comes with DV-editing software from MGI called VideoWave, and DVD creation software from Sonic called MyDVD.
Adaptec, 01276 854 599

continues page 48

CDs & books

World wide Atlas

Map Resources has released Atlas 2002. The collection of 150 maps comes in six vector formats including Adobe Illustrator and PDF. The Atlas comes in two options. The first offers a year of unlimited online access to updated maps and a CD-ROM containing all Atlas 2002 maps for $149. The second offers one year's online access to Atlas maps for $99.
Cadmium, 0800 436 867

Oxford geography

Oxford University and Sherston Software have released The Oxford Talking Infants Atlas CD-ROM. It teaches children in years 1 and 2 maps and geographical terms. The update features more British Isles maps and 12 new activities. Text is narrated for less able readers. It costs £30.



Sherston Software, 01666 843 200

Photoshop for real

Real World has released Adobe Photoshop 6.0: Industrial Strength Production Techniques. The book, authored by *Macworld* contributing editors David Blatner and Bruce Fraser, includes the latest RGB and CMYK settings. The book costs £37.99. *Real World Adobe Photoshop 6.0* is free to new *Macworld* subscribers.
Macworld, www.macworld.co.uk/subs

Basic programming

O'Reilly has released REALbasic: The Definitive Guide, Second Edition. Priced at £28.50, the book includes reader suggestions and programming improvements of REALbasic 3. The book, by Matt Neuburg, provides coverage of REALbasic 3.2.1.



O'Reilly, 01252 711 776



Free state

ImageState (www.imagestate.co.uk) has launched 37 royalty-free image CDs. The CDs focus on people, lifestyles, concepts, business, beauty, travel and sport and many feature high-resolution 60MB files. The number of images contained on the CDs varies from 60 to 120, depending on file sizes and content. The high-resolution CDs are priced at £280 each. Standard 30MB file-size CDs cost between £220 and £250. Individual royalty-free images cost between £35 and £160.
ImageState, 020 7734 7344

Flat-panel trio ship in Sync

NEC-Mitsubishi Electronics has launched three 15-inch LCD monitors – the Multisync LCD1550M, Multisync LCD1550V and the Multisync LCD1550X.



The 15-inch £389 LCD1550M (right) is fitted with two 1W speakers. It has a recommended resolution of 1,024-x-768 pixels at 60 to 75Hz. The LCD1550M weighs 4.5kg, and measures 345-x-362-x-162mm. It has a viewable picture area of 304-x-228mm and sports a horizontal viewing-angle of 150 degrees.

The NEC Multisync LCD1550V measures 345-x-352-x-164mm, but weighs only 3.8kg. Its recommended resolution is 1,024-x-768 pixels at 75Hz.

The £299 LCD1550V provides a horizontal viewing-angle of 120 degrees. The active display area is 304-x-228mm.

The LCD1550X is equipped with Ambix technology so it can display information from two Macs at once via a DVI-I input (Digital Video Interface) and VGA (video graphics array) input.

The LCD1550X measures 345-x-380-x-202mm and weighs 6kg. The active-picture area is 300-x-230mm, and its maximum resolution is 1,024-x-768 pixels at 75Hz. The LCD1550X's price has not been set.

NEC Mitsubishi, 020 7202 6300

Projectors weigh in



Standard display
The XL1U supports sRGB, allowing it to match the colour performance of other display devices.

Mitsubishi Electric has released two portable projectors – the XL1U and the SL1U. The former features an XGA (extended graphics array) resolution of 1,024-x-768 pixels, offers 1,000 lumens of brightness, and weighs 2.9kg.

The SL1U is the SVGA (super video graphics array) version and has an 800-x-600 pixel resolution. It has the same brightness and weight as the XL1U. The projectors are priced at £2,800 and £1,850 respectively.

Both the XL1U and the SL1U offer Intelligent Room Illumination Sensor (IRIS), Natural Colour Matrix, Digital Keystone Correction and Digital Expanded Zoom. Mitsubishi's IRIS control adjusts brightness and contrast settings automatically. Natural Colour Matrix controls six colour signals to deliver the reproduction of subtle tones. A dual-mode lamp allows the projector to run at 34dB.

Both have RGB inputs that accept component video signals from DVD players.

Mitsubishi Electric, 01707 278 684

Macworld.co.uk For the information as it happens visit Macworld Online Daily News (www.macworld.co.uk)

David Fanning

The iPod may look fine, but Apple should be wary of rolling out too much 'iHardware'.



No hard feelings?

Once upon a time, Apple didn't just sell computers. You could buy Apple-branded scanners, printers and external hard drives. But then, about four years ago, Apple decided it should concentrate on its core strengths – computers and software. The Apple LaserWriter, StyleWriter and the Apple OneScanner we've consigned to the scrap heap, and peripheral manufacturers were left to take advantage of the market.

More recently, Apple has been making new moves towards different markets with software and hardware. The iPod is the latest offering, though it started with software products such as iMovie, iTunes and Disc Burner.

The launch of iMovie was innocent enough, as there was only one other inexpensive DV-based editor around. However, the iTunes release can be blamed for the demise of the excellent SoundJam from Casady & Greene.

The suite of facilities offered by iTools may also have affected competing products offering Web hosting, online data-storage and Internet postcards. However, many of the competitors were either incompatible with Macs or just plain rubbish. So many failed due to bad planning.

Hardware, however, is a different matter. Apple's first foray into hardware components to plug into its "digital hub" has resulted in the iPod.

The iPod is an obvious solution to digital music on the move. Apple has simply packaged it and designed it to be the ultimate in designer hardware. Of course, Apple has advantages over the likes of Rio, Archos and Creative Labs. Because it has the Mac, and the music-playing software (iTunes) to itself, it can design features that rely on the symbiotic relationship that this creates.

If Apple decides to go further with this policy, there is no telling where it will stop. This isn't going to be too popular with the hardware and software manufacturers.

The most often-mentioned possibility is an Apple digital camera, and iPics. Frankly, I don't think a digital camera is a very smart move. The market is competitive and the current product range offers every conceivable option already. Maybe I'm lacking imagination, but I don't see how Apple could improve on the current crop. There are significant benefits gained from using an iPod because MP3 players are a relatively new technology. The idea of an iCam hasn't as much potential because digital cameras have been around for a while – manufacturers are already stuffing the new models with more features than the average punter will use. I suppose Apple could add FireWire charging and downloading, but it wouldn't represent anything really groundbreaking.

Rumours of an iPics entry-level photo-editing application have been around since the first iApplications were launched. It's an obvious tool, perhaps too obvious. There isn't a great deal of competition here though. Adobe has Photoshop Elements, which is in the neighbourhood, but still not as simple as the other iApps.

Another oft-touted rumour is an Apple-branded Palm OS device. Having invented the genre (sort of) with the Newton, Apple is doubtlessly peeved at missing what has been a pretty lucrative business until recently. However, I wonder if the Palm platform would have enjoyed the same level of success if it had been from Apple. I'm sure PC weenies would have spent more time picking holes in the technology.

Despite a promising start, both Palm and Handspring are struggling. The Pocket PC is gaining on them, but the whole handheld computer market is weak. Apple certainly aren't going to be making a Pocket PC, and the Palm-compatible option seems unlikely. It could of course use a new Apple OS, but that didn't work last time.

The final piece in the digital-hub jigsaw is the camcorder. Of all the options this one could work – but only with a co-operative OEM. There are surprisingly few manufacturers of cameras with DV In and Out. In theory, Sony, Sharp, Canon and others could supply the guts of an Apple iVid. However, an Apple product would need to have a simplified human interface to meet with the expectations of iApp consumers. At the moment, camera designers are bolting on anything they can come up with to give them an edge over the competition. The more gadgets on a video camera, the better it sells. But who is to say a simple and robust video camera wouldn't sell. Schools are the most obvious consumers of such things. A kid-friendly camera could be a winner for Apple, if the price is right.

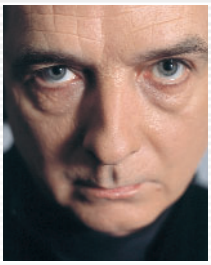
Price is so often the downfall of otherwise genius moves by Apple. The iPod is a perfect case in point. A £200 iPod would have tempted me, but £350 – no thanks. I understand that Apple has to pay for a team of designers of the calibre of Jonathan Ive, but there is a limit to how much extra I'll pay for a design classic. Everybody loved the G4 Cube, but few loved it enough to buy one.

I would prefer Apple spent its research and development cash on Macs, and left the peripherals to others – although it could prove me wrong. They could even rent out the services of the Apple design team to other companies that desire the caché of design stars such as Ive. At least Apple would be guaranteed to make money on the deal, while letting other companies both spread the word, and take the risks. Apple-designed HP printers or Epson scanners anyone? Or even an iCar, iWear or... iDunno – anything. **MW**

'Would the Palm platform have enjoyed the same level of success if it had been an Apple product? I'm sure PC weenies would've picked holes in the technology.'

Michael Prochak

The music industry's latest copyright wheeze will cost consumers and could leave CD standards looking like a joke.



Prank robbers

The great pendulum swings with a vengeance, and, as time rushes on, immunity is no longer an option. Sometimes the age thing makes me feel like I'm staring at the world from the wrong end of Gatsby's lonely swimming pool, particularly as more and more old friends and influences reality-jump on an all-too permanent basis.

Although the mortality bug continues to bite like some sort of bad prank, at Ken Kesey's funeral recently, another old friend, Ken Babbs reminded us that it's important to know precisely what a prank is. "Kesey defined it as something that doesn't hurt anyone," said Babbs. "It has to be illuminating and it has to be funny."

Meanwhile, out in the twisted reality that passes for the music industry, where no one would mind if a few more of the swine would take that final jump, the latest vicious idea of a prank is neither illuminating nor funny. And believe me, a lot of people are going to get hurt. Here's the melody line... see if you can pick up on the dis-harmonies.

In one corner, we've got Apple doing some really cool things on the music front. Always the best platform for music production and performance, the Cupertino crowd has pushed the realms of accessibility even further with the launch of the iPod... the first MP3 player to pack a mind-blowing 1,000 songs and a 10-hour battery into a stunning but stylish 6.5-ounce gadget you can take everywhere. iPod comes with Apple's award-winning iTunes 2 software with automatic synchronization to keep your iPod music and playlists up to date.

Whenever you add new music or modify your playlists in iTunes, you just need to plug the iPod back in and the changes will be automatically updated in seconds. With iTunes 2, anyone can rip MP3s, create playlists and burn custom CDs all from one refreshingly simple interface. Well... at least for the time being.

I say for the time being because in another corner – a dark sleazy corner at that – the record industry is plotting yet another prank that will cripple things such as Apple's iPod, and rip the lungs out of the very phenomenon that could convince more people to buy more music. In their slack wisdom, the music industry moguls have now decided that ripping CDs is a threat to their existence, and have decided to make it impossible – if not down-right difficult.

How are they going to manage this? Well, they're going to modify the existing CD standard format so that ripping won't work. That will mean that when you buy a CD, you'll be able to play it on your stereo, maybe in your car or portable Discman, and maybe... just maybe... on your computer.

And to make things even more confusing, the record companies aren't going to tell us which titles are protected, which means the first time we'll find out is when we try to rip them and it doesn't work. There's also a good chance that most of these new versions won't even play on a computer.

Now, here's the punch line. Some record companies have decided to deviate even further from the existing agreed CD standards by offering two versions of albums. One will be in a more or less conventional PCM, 16bit, 44.1kHz sampled audio format. The other will be in that ever so popular Windows Media Audio format, protected by the even more twisted Windows Rights Management... courtesy of those greedy geeks from Redmond. Apart from the obvious madness and inherent danger in letting Microsoft control the way we use music – which readers will note, I rant about with some regularity – what sort of format chaos and uncertainty will this ugly prank cause for the average listener?

'The record industry is plotting yet another prank that will cripple things such as Apple's iPod.'

Although there was a bit of a hiatus while we swapped from vinyl to CD, at least as a format CDs have remained fairly constant. I can still play albums I bought in the 80s and not worry about whether my player or Mac will work or not. If the record industry jumps ship for what may be just another mutant flavour of the month from Microsoft, what happens if Uncle Bill decides to change it again and withdraws the ability to play WMA titles? If the format starts to change as often as most software versions, fixes and 'enhancements', we could all be left with a useless stack of shiny, non-absorbent beer mats.

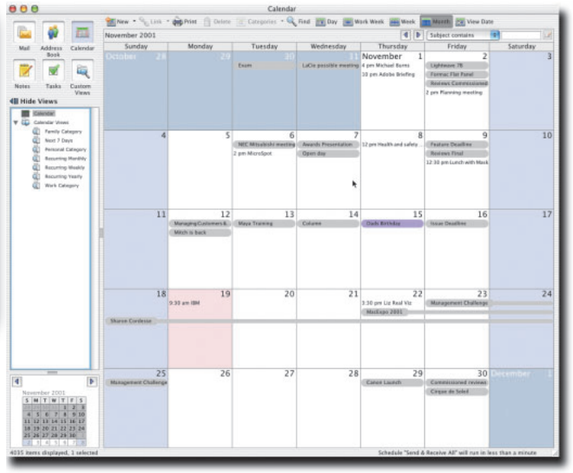


Part of the ethic that Ken Kesey and the Merry Pranksters left behind was the admirable aspiration to become an enlightened and holy fool. Unfortunately, the record industry and companies such as Microsoft interpreted that as wholly fools, and seem to think we'll all just roll over and swallow this sort of crap and simply keep spending our money on whatever they put in front of us. Well, this one doesn't qualify as a prank. It's not funny, it's not illuminating, and you can bet it's going to hurt. MW

X business apps

Office:Mac v.X

Publisher: Microsoft
(0345 002 000)
www.microsoft.com/uk
Pros: Beautiful; functional; sort of crash proof.
Cons: Only Mac OS X users get to use it.
Min specs: Mac OS X
Price: £365; upgrade £195. (Both prices exclude VAT.)
Star Rating: ★★★★★/9.0



Look ahead
The new Aqua interface makes all the components of Office look great. This calendar view in Entourage is a good example of its improved design.

There have been many versions of Office in the past. Some have been good, a few notoriously bad. Office:Mac v.X is bound to raise some controversy, being for Mac OS X only. But it's certainly the best Office yet, and by some measure.

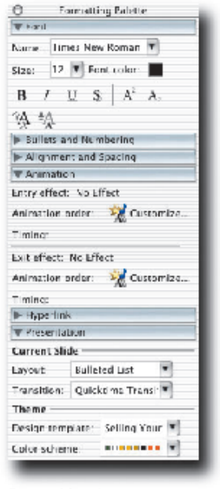
The most striking thing about v.X is the lush Aqua interface. Microsoft worked very hard to make it as beautiful as the OS X interface. Some aspects, such as the Genie Effect, may be a little frivolous, but I know PC users can hardly believe their eyes.

The improvements are more than skin-deep though. Stability in OS X is rock solid, and in the unlikely event of a crash, OS X ensures that the other applications are unaffected. Microsoft has also made good use of other under-the-hood technologies such as Quartz, Carbon Events and Sheets.

Quartz is the 2D drawing engine of OS X. It brings features like transparency and antialiasing to Office. Now when creating a chart in Excel, you can have translucent bar-charts with exquisitely smooth text. The same goes for PowerPoint, Excel and even Entourage.

Entourage was one of the best new Office features in 2001. In v.X it gets better still. The layout has been changed so that the other elements, such as the Calendar and Notes panels, are more accessible.

There are a couple of disappointments, though. The shortcuts are now different, despite being only the second release of Entourage. In the past, you could view only unread messages by hitting ⌘-Y, now it's ⌘-Shift-O. It's quite a difference, and I don't relish relearning the rest of the short cuts. Entourage is now much more adept at adding extra formatting to emails. Now, you can add a background image, add pictures within the text, and even include movies and audio files. All this stuff appears with varying amounts of success in different email packages. Of course, other Office v.X users will get all the formatting correctly, but users of the original Entourage miss some features. People using older email packages – or, heaven forbid, email apps made by other companies – will get even less of the formatting.



Form and function
The formatting palette looks much the same as before, but with antialiased text and spiffy Aqua menus.

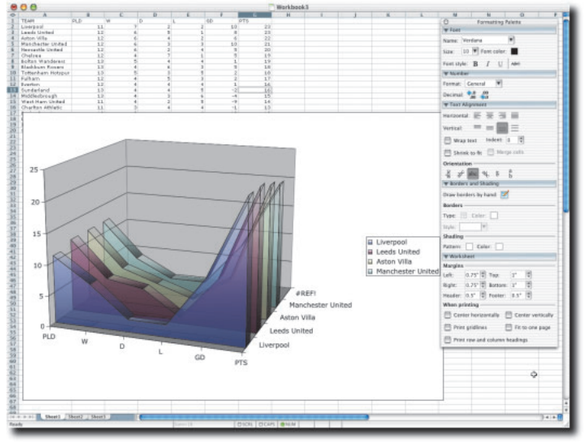
One thing to beware of is adding audio or video files. These can massively increase the size of messages, beyond just the size of the attachment. If you want to stay friends with Mr IT manager, use this feature sparingly.

The calendar has had a bit of a makeover, and now looks very fetching. It has a tasteful colour scheme, and the antialiasing makes it easy on the eye. Printing a calendar is also more straightforward than before, thanks to a proper preview.

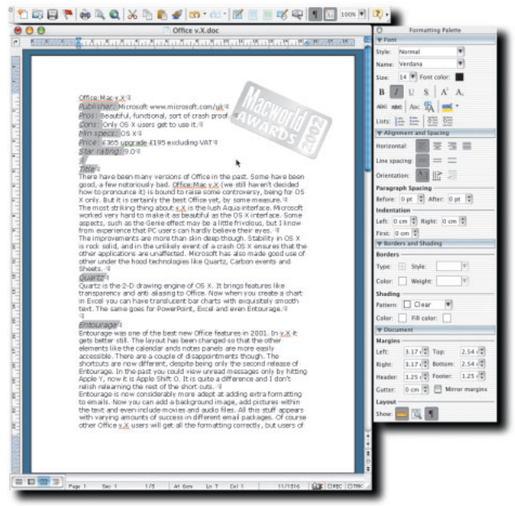
Word is probably the most familiar component of Office, and there aren't any really radical changes to it apart from the look of the interface. A minor one is the multi-selection ability. This lets you select non-contiguous pieces of text for formatting or deleting. This is a welcome addition to the option-click ability to highlight text vertically. Another minor, yet welcome, addition to the style options is Clear Formatting. Getting rid of formatting has been hard to do in the past. My preferred method has been to save as plain text, and then reopen the file. This addition means I can do the same thing quickly and easily.

Transparency and the Quartz graphics layer means graphics in Word are better than ever. It isn't about to replace XPress or InDesign, but it does offer a pretty good selection of tools for creating business graphics. It even has some image-effects filters.

Mail merge has been improved, allowing individual addresses to be added instead of your whole address book. I don't use this feature much, but Microsoft claims you can do a mail merge in 10 clicks



Quartz accuracy
The Quartz graphics allows fantastic looking images, even in Excel. This 3D area graph uses transparency to show four sets of data.



instead of 50 clicks with Office 98. There are many more minor enhancements, but the main point is having Word run natively in Mac OS X.

Excel also gets the Aqua treatment, with nice touches such as drop-shadows on active cells and spiffy charts. One new feature that – shockingly – wasn't already available is AutoRecover. However, now you shouldn't need it, because you are likely to crash.

Again, most of the enhancements are fairly minor – but welcome – updates. The euro is now available as a currency format, and Excel can import directly from FileMaker 5.5. Also, the calculator feature gives new users a more intuitive way of creating formulae than the traditional method.

PowerPoint gains a lot from the Quartz interface and looks fantastic for it. Of course, the new Quartz features of PowerPoint v.X are only available for OS X. If you try and play back your presentation in an older version of Office, you may be disappointed.

PowerPoint can now create packages that play back from CD-ROM or other media. It's similar to the XPress collect for print command, gathering all the relevant media into one folder. It should save on embarrassing "oops-I-forgot-to copy-across-the-movie-files" moments when presenting. For even easier presenting, you can save presentations as QuickTime movies.

That covers the main features of Office v.X, but there are also some new extras thrown in, such as MSN Messenger. This, like the AOL instant messenger, lets you communicate with other users in real time – rather than using pokey old email. Actually, I think I might be a little too old for this stuff. Instant-messenger software and text messaging on a mobile are firmly in the domain of people with more to say than me. I like email. I use it all the time, but the thought of being available for people to type at me live gives me the willies.



Get the message
MSN Messenger (near left) may well be a good idea, but unfortunately I don't have any friends (that use it).

The ability to select different blocks of text and apply formatting to them in Word (far left) will save a lot of time.

Another freebie is the Windows Media Player – although it's also available free as a download.

Macworld's buying advice

I love OS X, and I use Office every day, most of the day. Office v.X is something I have been desperately waiting for, and doubtless many others have, too. I am pleased to say they won't be disappointed – Office v.X fully lives up to its promise. You won't be able to experience the benefits of Office v.X until you have upgraded to Mac OS X. The success of OS X and Office v.X is inevitable – although the timing of people's transitions is difficult to determine. Microsoft's Office v.X will encourage people to make the move sooner rather than later.
David Fanning

Rival for 17-inch Studio Display

Gallery 1740

Manufacturer: Formac (020 8533 4040)
www.formac.co.uk
Pros: Good value; big screen; slick design.
Cons: No Apple logo.
Min specs: ADC (other versions available).
Price: £619 for the ADC model; £649 for the VGA or DVI models. (Prices exclude VAT).
Star Rating: ★★★★/8.9

Since Apple got into the LCD flat-panel market, other vendors have been squeezed. This summer, Apple cut prices and spoiled everybody else's fun. However, Formac has a new LCD screen that competes with the 17-inch Studio Display. The Gallery 1740 is the first non-Apple-made monitor to use ADC (Apple Display Connector), which means power, signal and USB run through one cable.

Price is going to be a factor in any buying decision. The Formac model costs £619, compared to Apple's £699 price tag. It's a small saving, and not enough to sway most people. However, the specifications aren't identical – the screen size is 17.4 inches on the Formac screen, compared with 17 inches for the Studio Display. The resolution is 1,280-x-1,024 pixels on both models. Other specifications, such as brightness, are difficult to measure, and you'd be pushed to see the difference.

Most of Apple's competition is grey and bland. Formac has countered this with its own sleek, transparent design.

One of the biggest criticisms of the Studio Display has been its compatibility with only new G4s. Even if you're using an older Mac, there's a Gallery 1740 with a VGA connection, or a DVI connection.

Macworld's buying advice

Formac has made a formidable competitor for Apple. The specifications are better, the screen is bigger, and the price is lower. It all comes down to how much people will pay for the Apple logo, and what they are happy to give-up to get it. If you're not so label-conscious, then take advantage of a great deal from Formac.
David Fanning



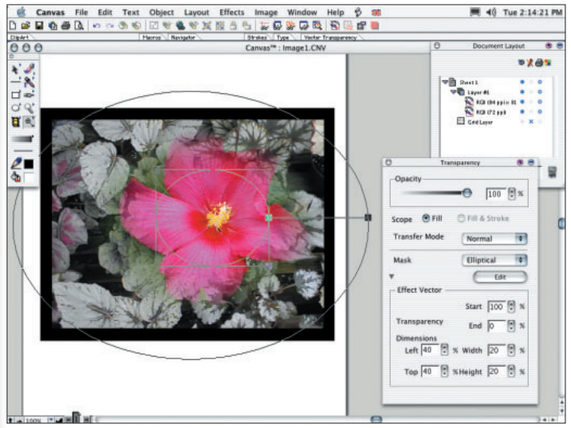
In the gallery
Formac's Gallery 1740 could almost be an Apple design – if it were more expensive.

Macworld.co.uk Search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month

Vector and bitmap app

Canvas 8

Publisher: Deneba
www.deneba.com
Distributor: Computers Unlimited
(020 8358 5857)
Pros: Excellent hybrid paint/vector environment; Web and page-layout tools; fantastic vector-sculpting tools.
Cons: Still a bit glitchy under Mac OS X; painting can be slow; colour could be better.
Min specs: PowerPC; Mac OS 9.0.4, 64MB RAM; Mac OS X, 128MB; 100MB hard-disk space.
Price: £329 (including VAT)
Star Rating: ★★★★/8.8



Setting transparencies
Objects can be masked using radial, linear, rectangular or elliptical masks tools, as well as by painting them by hand.

As graphics programs go, Canvas from Deneba Software is fairly unconventional. In a market dominated by the likes of Adobe Photoshop and Illustrator, and Macromedia FreeHand, a graphic program has to offer something special. Canvas 8 from Deneba does just that, with its hybrid vector/bitmap, page-layout, text and Web-design tools.

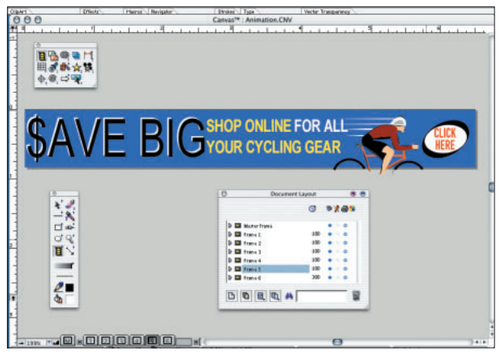
Canvas 8 is the first to run under Mac OS X, and is optimized for Velocity Engine. It's Carbonized as opposed to being a full-on Cocoa app – of which there are few so far – so the same app will run under Mac OS 9.

Refreshing Sprite

Canvas 8 is an extremely cool program. It's based on Sprite technology, which offers a hybrid vector/bitmap environment and near seamless integration between the two drawing types. If you're a pixel-pusher who has found themselves on occasional forays into the world of vector illustration, and been baffled as a result, Canvas will be a real delight.

Cool thing number one: you can draw any vector path or shape, and then blur it using a Gaussian Blur filter. In fact, there is a whole load of Sprite filters that you can apply to vectors as if they were bitmaps: blurs, artistic effects, colour and tone adjustments, sharpen, noise – basically all the usual effects you'll find in Photoshop. Effects are applied live – that is, they remain editable and can be viewed in stack-like image layers using the Sprite Effects browser. You can reorder them, switch them on or off, and edit their properties. Because the underlying object is a vector, you can use the editing tools to reshape it. Edits are previewed in wireframe then are re-rendered in all their bitmap glory.

Banner feature
A new image-slicing tool in Canvas 8 makes creating and managing the deployment of Web graphics simpler. Flash output is supported, and you can create gif animations (though not rollovers) with ease by mixing vector and bitmaps in the creation process.



Canvas 8 definitely feels like its vector tools were designed for someone used to bitmaps and painting tools. You get the usual bézier pen-tool and circle and rectangle tools, which work as expected. However, it's the editing tools that raise an eyebrow or two. Push and Reshape will make the seasoned bitmap artist weep with joy. Basically, if you draw a shape using the bézier pen tool and it's not quite right, you normally would have to start editing the bézier handles, or add points – often getting in a mess (if you're unused to vector illustration). Forget that, just grab the Reshape tool and draw freehand over the bit you want to correct. The path then instantly reforms to take in your suggestion. You don't have to be very precise either, as the resulting bézier curve will be naturally smooth. This tool can be used as a way to manipulate paths creatively too, and it feels very fluid.

The other tool, Push, is very similar – except it modifies existing curves a bit like a bitmap smudge tool would. You can use the Push tool to sculpt bézier paths as if they were pieces of string laid on a table. The Push tool has a Range setting that defines the effect radius. What would be better is being able to access the size property while drawing by holding the ⌘ key and dragging.

Canvas is also a painting tool, but first impressions with the brushes were not quite as favourable. The display was is when painting even moderately rapid strokes, and you end up with straight-line segments instead of a smooth stroke. There's a full complement of paint tools such as smudge, clone, dodge, burn, airbrush, etc. New in version 8 is the ability for any of the brushes to paint using textures, as opposed to just flat colours. However, it's no competition for a dedicated natural-media paint tool like Procreate's Painter 7, for example. Selection tools include the magic wand, marquee and lasso selections – though there is no Colour Range feature.

Canvas 8 offers some simple 3D modelling via its Extrude tool. Any vector path can be swept, lathed or extruded to create a polygonal-3D object on your canvas. The polygons are not smoothed, however, so 3D objects appear faceted – but they can be excellent as guides to help with creating objects in perspective.

The interface is surprisingly well designed. New to version 8 is a bar running along the top of the current document that stores docked palettes. It's small enough to not hog too much screen space, and, as such, is much better than Photoshop 6's clunky palette dock. However, Photoshop veterans will baulk when they discover there's no layers palette. A bit more digging and you realize that Canvas's does have an object/layer browser called Document Layout. Layers here can contain multiple objects whose visibility can be controlled separately for on-screen and print display. There are no layer-blending options here though; you access these through the transparency palette – slightly confusing, but not difficult to use once learned. There are the usual blending modes and a transparency slider. As mentioned before, vector and bitmap, 3D and type objects are handled equally. There is also a superb procedural-mask option that offers radial, linear or rectangular gradients with live handles for manipulating them for quick and direct masking of objects. Superb.

Macworld's buying advice

Canvas 8 is quite a revelation. It's very well designed, easy to use, and works pretty well under OS X. There are a few glitches: some parts of the interface can be slow, and, despite being improved, colour management could still be better. If you always wanted to use vectors but found Illustrator and FreeHand a struggle, it's well worth checking out Canvas 8.
Simon Danaher

CD storage solution

Network CD Box

Manufacturer: LaCie (020 7872 8000)
www.lacie.co.uk
Pros: Simple to use; convenient for archive storage.
Cons: Some Mac OS X quirks.
Min specs: Ethernet network.
Price: £899 (excluding VAT)
Star Rating: ★★★★/8.7

One of the great things about modern Macs is the fact that many of them have CD writers built in. CD storage is just about the most flexible media around. Cheap, easy and above all compatible, CDs are the top choice for archiving – but there are drawbacks. For a start, it doesn't take long before they start to stack up, and keeping track of CD archives in a busy office can be problematic. The other problem is that CDs are delicate, and won't stand up to constant abuse. LaCie has come up with a novel solution to the problem: the Network CD Box.

This isn't the first version of the Network CD Box, though it has been updated with custom LaCie software rather than the original internal software. The box is basically a Network Attached Storage (NAS) device. This means that you plug the box into an Ethernet network, and it works independently of a Mac. In fact, it contains a tiny server to control the hard drive, CD drive and network functions.

Once it's hooked-up, which should take about 30 seconds, you can load the first CD. The box will copy the CD to the hard drive as a disc image. Then you can access the data from anywhere on the network. A Mac OS 9 machine will see the CD on the network easily through the chooser. If using Mac OS X, then you'll need to use either AppleTalk, or – if wanting to use TCP/IP access – you need to get to the drive by typing in the IP address. This is a bit of a drag, but not the end of the world.

Before the Network CD Box, the only way to keep a lot of CD archives available on the network was to invest in a CD Jukebox, which was a slow and expensive option. By copying the CD to a hard drive, the CD Box makes it quicker to get the CD over the network than it would be to copy the CD. In a quick test, I copied a 300MB CD across the network from the CD Box. This took two minutes and 16 seconds. Then I took the physical CD and copied the contents to the same drive. This took two minutes and 48 seconds, 32 seconds longer. Plus, this doesn't take into account finding the CD and putting it in the drive in the first place.

The capacity of the CD Box is 60GB, enough for around 95 full CDs. However, most archives don't fill a CD to capacity. A quick check of the CDs in our archive here revealed an average 300MB was used on each CD. This would mean we could squeeze about 200 of our archive CDs onto the CD Box, which should see us right for the foreseeable future.



Rock and roll
Compared to CD Jukebox machines, the Network CD Box is minute.

Macworld's buying advice

Using this system means that Jukebox systems are effectively obsolete. This method is faster, cheaper and more convenient. Because you only load the CD once, it means that your backup archive is more likely to last longer too.
David Fanning

Graphics pad and LCD screen

Cintiq

Manufacturer: Wacom www.wacom.com
Distributor: Computers Unlimited
(020 8358 5858)
Pros: Excellent display; great surface texture; good value; easy setup and calibration.
Cons: Higher-end pen not included; no support for specialty pens; lacks tilt and bearing sensitivity.
Min specs: DVI video output or a Mac with ADC and a DVI adaptor.
Price: £1,195 (excluding VAT)
Star Rating: ★★★★/8.1

Wacom's pressure-sensitive graphics tablets have become ubiquitous, indispensable tools for Mac-based graphic artists. But if co-ordinating movements across a tablet with on-screen actions is awkward for you, then consider Wacom's Cintiq, the latest iteration of that company's combined tablet and LCD screen. It fixes many idiosyncrasies of Wacom's previous LCD tablets and, at £1,195, is more reasonably priced.

The Cintiq's 15-inch LCD screen has a maximum resolution of 1,024-x-768 pixels and support for 24-bit colour. Simply by pressing and holding a hinged release on the Cintiq's stand, you can tilt the tablet to any angle for use as a completely upright monitor or an almost-flat tablet.

Because Cintiq works as a second display, you'll need an additional video card. The Cintiq attaches to your Mac's video port via its DVI outlet, and it comes with a DVI-to-VGA adaptor – so you should have no trouble attaching it to any modern Power Mac, iBook, or PowerBook with a video-out port. To connect it to a Power Mac G4 that has an NVidia GeForce2 MX video card with TwinView, you'll need a £36 ADC-to-DVI adaptor, available from Lindy (01642 754 000). No matter which Mac model you use, you'll also connect the Cintiq its USB port.

The tablet's display is first-rate, offering excellent colour, brightness, and contrast; however, the contrast ratio of the Cintiq's LCD – like that of all LCDs – varies slightly across its surface.

Earlier Wacom LCD tablets suffered from two main problems. First, the tablet surface that sat over the screen was so thick that there was too much space between the on-screen image and where the stylus touched the drawing surface. This created a parallax problem that was annoying when doing fine-detail work. But the Cintiq has a much thinner drawing layer, which allows the pen almost direct contact with the underlying surface.

Second, previous Wacom LCD tablets had a very slippery texture that pens would often skate across. The Cintiq's surface is much-improved, providing resistance similar to a piece of paper's, and giving you much better control for fine strokes. However, it isn't tilt- and bearing-sensitive, so it can't determine the angle at which you're holding the stylus, and therefore can't use that information to vary the characteristics of strokes.



We can't help but wonder why Wacom didn't include the new Grip stylus, which comes with the high-end Intuos2. The Cintiq is also a lower-resolution tablet than the Intuos2, and it lacks a programmable menu.

Style-less
Wacom provides an Ultrapen stylus that supports 512 levels of pressure sensitivity, a two-way side-mounted rocker switch, and a programmable eraser. But unfortunately, the Cintiq can be used only with the Ultrapen stylus, not with specialty pens such as calligraphy or airbrush styluses.

Macworld's buying advice

Previously, it was difficult to recommend Wacom's LCD tablets to anyone but highly paid graphic artists, but this is not true of the Cintiq. The tablet's improved design and more comfortable drawing surface, as well as its ability to stand upright make the Cintiq well worth its price. If the bulk of your work involves digital painting or retouching, and especially if you've been contemplating the purchase of an additional flat-screen monitor, you'll want to seriously consider the Cintiq.
Ben Long

Macworld.co.uk Search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month

Colour inkjet printers

DeskJet 960c

Manufacturer: HP (0870 241 1485) www.hp.com/uk
Pros: Good price; almost silent; paper auto-sensor.
Cons: Slow; fiddly paper-input system.
Min specs: PowerPC; USB; Mac OS 8.5.1 or later.
Price: £149 including VAT.
Star Rating: ★★★★/8.2

Color Inkjet Printer cp1160

Manufacturer: HP (0870 241 1485) www.hp.com/uk
Pros: Duplexer; paper auto-sensor; infrared receiver.
Cons: Large; slow; clunky.
Min specs: PowerPC; USB; 64MB RAM; Mac OS 8.6 or later.
Price: £312 including VAT.
Star Rating: ★★★/6.8

Color Inkjet Printer cp1700d

Manufacturer: HP (0870 241 1485) www.hp.com/uk
Pros: A3 output; duplexer; paper auto-sensor; infra-red receiver.
Cons: Noisy; slow; LED window is difficult to read.
Min specs: PowerPC; USB; 64MB RAM; Mac OS 8.6 or later.
Price: £509 including VAT.
Star Rating: ★★★★/7.6

HP enjoyed a product bonanza over the past month, releasing a raft of new inkjet printers. We tested three of the latest: the low-cost DeskJet 960c, a totally redesigned device called the Color Inkjet Printer cp1160, and the impressive A3 Color Inkjet Printer cp1700.

The most striking aspect of all three taken together is that print quality doesn't vary a great deal from one model to the next. Rather, HP reckons it has developed the very best inkjet printhead possible for a desktop device, and simply varies the models in terms of engine performance and other hardware. As such, there's a product for every wallet.

Because the printheads are essentially the same, HP is able to combine the software print drivers for the various machines into one installer. We were pleased to find that HP has made Mac OS X drivers available as a free download from its Web site, to complement the Mac OS 8/9 drivers provided on the CDs in the box. Obviously, you'll need to install them all if you use both systems, but they seem to work together fine; the only exception is the HP Inkjet Utility that refuses to do anything if it thinks the other OS is using the printer, even if it isn't. Also, certain clever print options are not yet provided in the Mac OS X version, which is a disappointment.

DeskJet 960c

In conventional HP fashion, paper is loaded into an input tray at the front, while printouts are dropped on a tray immediately above. In this instance, refilling the input feeder is a bit fiddly, involving hinging up the output tray, pulling the tray below out a little, pushing sheets part of the way into the printer itself and lining up some guides. The trays feel like they'll snap into pieces if you're too rough when handling them.



Good-looking and good value
HP's DeskJet 960c is a thoroughly affordable personal colour inkjet, that looks more stylish than the price suggests.

Despite an official speed rating of 15 pages per minute (ppm), we could nudge towards this figure in raw draft mode only. Using Normal quality on plain office paper, a plain black text document averaged around 3ppm, which is nothing to get excited about. An A4 high-resolution photo printed from Photoshop onto glossy stock took nearly eight minutes – but the results were definitely worth the wait. HP output is exceptional on all papers. Another issue raised during our speed tests was the noise level, and the DeskJet 960c's almost silent performance is a key feature that buyers will love.

Macworld's buying advice The DeskJet 960c represents excellent value for the quality of its output. Its near-silent performance makes it great for home and small office alike.

Color Inkjet Printer cp1160

Quite a different cauldron of cod is the Color Inkjet Printer cp1160. This machine is neither small nor silent. It departs from the time-honoured HP DeskJet style by opting for an unusual wide, flat-top design reminiscent of a tea tray – see below left. Equally unusual is the huge AC adaptor supplied, without doubt the biggest we've ever seen.

To get access to the carriage inside you need to swing open a large door at the front and lift a flap on the top – at which point you wish you'd never put anything on it. Initial installation involves fitting a full set of four printheads and two ink cartridges. You'll know if these have not been fitted correctly because blinking icons will warn you in a little status screen at the front of the printer. This is a bright, clear, backlit LCD screen showing a simple picture of the cp1160 along with blinking sections, such as the paper or the ink cartridges or indeed the printheads. We can see the point of this kind of feedback, but it does border on the childish – and there's no on-screen error message to match.

Up to 150 sheets of paper can be loaded into the open tray at the front. As usual, these are fed through a U-shaped path inside the printer and output directly above the input tray, face-up.

The output tray provides a narrow slit to the tray below to help line-up envelopes individually. Although the input tray can be removed completely, it's not actually necessary to do so before restocking it. The quality of the paper you load is detected automatically by the machine's built-in light sensor, which is also used to conduct the self-calibration each time you change the ink cartridges.

The cp1160 is not a great deal faster than the £100-cheaper DeskJet 960c, achieving an average speed of 3.5ppm for plain black-text documents, while our A4 hi-res photo took just over seven minutes to complete, admittedly using glossy paper. It justifies its higher price with a number of other hardware features, such as an infrared receiver that lets you print wirelessly from any IrDA device. Certain PowerBooks are obvious examples, but you can just as easily tap 'Send' on a palmtop to print off addresses and timetables.

Also included in the box is a duplexing unit that inserts easily into the back of the printer. Duplex printing is very slow, but the convenience of printing on both sides of the paper for long documents without having to reload the sheets for a second pass far outweighs speed in this instance.

Macworld's buying advice These extra features probably make the cp1160 worth the extra £100, as well as the support for an optional 250-sheet lower input tray. But it would be an odd personal printing solution.



Good-looking and good value
Despite its 673mm-wide footprint, the wide-carriage cp1700 isn't as massive as the box it's delivered in suggests.

Color Inkjet Printer cp1700d

The step up to the cp1700 – a meaty-looking and versatile A3 inkjet for business – is a big one. The case styling follows the general theme from the DeskJet range rather than the peculiar cp1160, thankfully, with three-tone grey details and curved edges. It's a smart and serious-looking printer for the office.

The cp1700d's printheads and ink cartridges are installed under a cover on the right-hand side. The ink is supplied in four separate tanks, which are big enough to make separating them in the first place worth the extra cost.

Fitting these items is just a little confusing, because every time you open the lid to install them, an LCD window at the front of the machine flashes a message telling you to close the lid again. Then again, you may not notice the error message because the LCD window is not backlit. It's readable in a brightly lit office, but calmer studio-style lighting renders the window completely illegible. If you're lucky enough to see what it has to say, you'll be able to keep track of ink levels, paper size prompts and so on. Also at the front is an infrared receiver for wireless printing. Paper is loaded at the front, where it passes through a U-bend and emerges in an output tray at the front again – in principle, it's just like the DeskJet 960c and cp1160.

This time, the trays are large and sturdy, and refilling the input tray is no great challenge, even with sheets sitting in the output tray above it.

Alternatively, for thick stock, sheets can be fed manually one by one into a slot at the rear of the machine, forcing a flat travelling path towards the front.

The entire rear section can be removed and a duplex unit fitted. This is supplied as standard with the cp1700d model. As with the cp1160, duplex printing is slow but well worth it, because it takes away a heap of manual bother, and during our tests did so without any jams or snarling up.

Our A4-based speed tests revealed yet another leisurely amble down print alley, achieving an average of 3.3ppm for plain text and completing our hi-res photo in a reasonable four and a half minutes. Where this machine excels isn't speed but versatility across paper sizes, and we must admit the A3 colour output on coated stock looks great.

Macworld's buying advice It's not perfect of course – printing is a noisy affair of clicks and clunks to a spinning fan backing track – but the cp1700 is good value for the price.

Richard Boardman



cp1160's design goes flat
No computer device should provide shelf-space unless you're supposed to put something on it – not least because the temptation to place your mug of tea on top is almost overwhelming.

Removable-disk drive

FireWire Peerless

Manufacturer: Iomega
020 7365 9527 www.iomega.com
Pros: Speedy, small storage; cool-looking base station.
Cons: Too expensive; interface module not available separately in Europe.
Min specs: Mac OS 8.6 or later; FireWire.
Price: Base unit bundled with 20GB disk, £399; base unit without disk, £269; 10GB disk, £159; 20GB disk, £199. All prices exclude VAT.
Star Rating: ★★★/6.1



When we reviewed Iomega's USB-based Peerless removable-disk drive in the August issue of *Macworld*, our main complaint was its dreadfully slow data-transfer rate. We recommended people buy a slim, inexpensive FireWire hard drive instead – or wait for the FireWire version of Peerless.

Iomega has now started shipping its FireWire Peerless drive, and *Macworld* tests point to an impressive 10-fold speed increase. This makes it a much more suitable option for digital-video and other large-capacity applications. Indeed, Peerless disks can support multiple simultaneous video streams.

USB is fine for mice, keyboards and even low-level inkjets – but FireWire is mandatory for giant storage and CD-RW drives. Iomega plans a faster USB 2.0 Peerless in the coming months.

Tough hard drive

The sleek-looking Peerless incorporates IBM's rugged Travelstar hard-disk technology – which is also found in many micro FireWire hard drives.

The disks are further protected by a SealSafe design that protects the read/write heads in the sealed disk.

Iomega claims that media prices are kept low because the electronics reside in the drive, not the disk. The drive is made up of a Base Station and an interface module. However, the price remains high compared to stand-alone portable FireWire hard-drives.

Peerless (USB or FireWire) costs £269 for the base unit, £159 for a 10GB disk, and £199 for 20GB. (You can get a base unit bundled with a 20GB disk for £399.) And don't forget that if you want it for, say, home and the office, you have to buy two of the things.

You get far-better value from LaCie's 20GB PocketDrive, which costs about £210, and doesn't require a base station – all you have to carry around with you is a FireWire cable. Similarly, Mac & More's 20GB FireLight costs just £199.

Peerless would be a better deal if you could buy the connection interface module separately, as that would mean you'd have to buy only one base station for multiple locations.

This inflexibility is made doubly maddening because you can buy the units separately in the US (where, by the way, the 20GB bundle costs $399… rip-off Britain again?). Apparently, this is to do with "the sales channel" – so bugger the customer, then…

Separating the electronics from the media doesn't save the customer money, but it does keep the disk weight down. A Peerless disk (160g) is less than half the weight of a PocketDrive (355g), which could keep costs down if you need to post disks around the world. However, the PocketDrive is a fully workable hard drive – via both USB and FireWire – whereas a Peerless disk requires a Peerless Base Station at the other end of the line.

Macworld's buying advice

The FireWire Peerless is a fast removable-disk format that looks and performs superbly. Unfortunately, it is priced out of contention by less expensive stand-alone portable FireWire hard drives – which don't require the purchase of at least one base station. And, these days, there's no excuse for charging pound-for-dollar prices.
Simon Jary



Projector

LP530

Manufacturer: InFocus
0800 028 6470 www.infocus.com
Pros: Versatile; cheap; powerful; top-quality video processing.
Cons: Bigger than models designed for pure portability.
Price: £2,990 excluding VAT.
Star Rating: ★★★★/8.6

InFocus has about the biggest range of data projectors anywhere. It uses LCD technology in some models, but its real forte is the excellent DLP (Digital Light Processor) technology that it uses in most models. The LP530 uses DLP with some other technologies new to data projection, to produces amazing images.

The specifications for the LP530 are impressive. It sports a 2,000-lumen output, with an XGA (1,024-x-768-pixel) resolution. And, it weighs in at a relatively dainty 5.7 pounds.

The LP530 uses a video processor from Faroudja. You're unlikely to have heard of Faroudja, unless you're into home cinema in a big way.

Faroudja makes video processors costing tens of thousands of pounds, so is not a household name. For the first time ever, Faroudja technology is available to those on a smaller budget – though admittedly not a small budget. It's a groundbreaking feature to include.

The Faroudja video processor works with moving video to eliminate artefacts introduced by the projection system. Normal video is an interlaced image. That's an image drawn in two passes; first odd, then even, numbered lines.

Projected video is not an interlaced image, as the whole screen is drawn in a single pass. It's also likely to have a different frame-rate to video.

For a projector to display video, the signal must be processed to allow for these different methods of displaying images. The Faroudja processor is the best in the business, and a side-by-side comparison of identical projected movies shows a huge difference in the quality of moving images.

If you've seen the diminutive InFocus's ultra-portable LP130, the shape of the LP530 will be familiar. However, this is a higher-spec model, and is therefore considerably bigger. That said, compared to a projector even a couple of years old, it's still compact; and comes in its own carrying case. The dimensions are 260-x-280-x-85mm.

The LP 530 isn't a tiny projector, but it is still small enough to take on the road. On the other hand, it's beefy enough to stay in the conference room, so you get the best of both worlds. This versatility makes it a highly attractive deal.



Good-looking and good value
At fist glance, the connectivity looks a little sparse. There is a Digital input with a cable that lets analogue VGA signals work, an S-Video connection, an RCA video connection, and an audio mini-jack socket. This is fine for most presentations, but if you need more you can use an additional module (above) that just snaps on the back.

Macworld's buying advice

The excellent video processor means this projector will be useful at weekends too, for your own private movie festivals or for screening World Cup football games, for instance.

You get a lot of functionality and versatility for your money. If the tiny ultra-portable LP130 was too frivolous to slip through the budget, this workhorse should qualify as more business-like.
David Fanning



Mono laser printer

HL-1450

Manufacturer: Brother 0161 931 2354 www.brother.co.uk
Pros: Nice price; fast personal printing; network upgrade option.
Cons: Only average print quality using standard driver; PostScript emulation available only from Mac OS X applications or using extra-cost network hardware.
Minimum specs: PowerPC Mac with USB; Mac OS 8.5.1 or later.
Price: £299 excluding VAT.
Star Rating: ★★★/6.5

Brother appears to have done the impossible – by building a PostScript-emulating and networkable A4 laser printer which sells for under £300. Once installed, though, it's apparent that not all the promised features are available to every Mac owner.

The HL-1450 is a compact 360-x-370mm-footprint box that can be located conveniently on or underneath your desk, without any flaps sticking out. Up to 250 sheets of standard office paper can be loaded into a fully removable cassette at the front, with up to 150 printouts collecting on top of the machine.

There's a manual-feed slot above the cassette, but no tray to go with it – so it's strictly a single-sheet operation for envelopes, header sheets, special stock and labels. A curved plastic cover at the rear can be hinged outwards to allow manually fed items to pass through to the back on a flat path.

As supplied, the machine comes with 8MB of RAM with an option to swap-out the installed SIMM to expand the memory to 34MB (£20 from **www.crucial.com/uk**).

In addition to USB and parallel ports, there's a mini-DIN socket at the back tantalizingly labelled 'LT'. But this turns out to be a connector for an optional 250-sheet lower tray cassette, not a legacy LocalTalk port.

Impressive speed

Driven by a 66MHz Fujitsu processor and a fast engine, the HL-1450 is rated at 14 pages per minute (ppm). In practice, we achieved an average of 12.5ppm for plain-text documents, which is still pretty good for a machine priced like an 8ppm personal printer. The standard resolution is 600-x-600dpi, but this can be dropped to 300dpi for faster draft printouts, or increased to 1,200-x-600pi for graphics.

A 30MB A4-sized photo printed from Photoshop 6.0 within 46 seconds, but only to an average image-quality using Brother's QuickDraw-based driver, not the BR-Script 2 driver for PostScript Level 2 emulation.

And herein lies the problem: BR-Script can be used only under Mac OS 8 or 9 when Brother's extra-cost network print server is installed. The optional network card alone costs £209. Conversely, the Mac OS X driver that you can download from Brother's Web site does use PostScript emulation – but of course only from Carbon-based applications.

When printing from non-X programs, such as Photoshop 6.0 and QuarkXPress, you can use only the basic non-X driver. Without PostScript, bitmap images look flat, gradient fills are banded, and placed vector-graphics print out as previews only. Office workers may also be disappointed to find that the handy manual-duplex feature in the QuickDraw driver doesn't exist in the Mac OS X driver.

Macworld's buying advice

Although we admire Brother for preparing a Mac OS X driver at all, the claims of PostScript emulation and networkability need to be qualified for other systems.

However, if your main needs are text-based, the Brother HL-1450 brings crisp laser quality to many desktops that normally couldn't have afforded it.
Richard Boardman

Optical USB mice

Wireless IntelliMouse Explorer

Manufacturer: Microsoft (0870 601 0100) www.microsoft.com
Pros: Cordless; five buttons; scroll-wheel; IntelliEye.
Cons: Requires two AA batteries; OS X software not ready at time of writing.
Min specs: Mac OS 8.6 or later; USB.
Price: £69.99 including VAT.
Star Rating: ★★★★/8.8

IntelliMouse Optical

Manufacturer: Microsoft
Pros: Five buttons; scroll-wheel; IntelliEye.
Cons: Beige; OS X software not ready at time of writing.
Min specs: OS 8.6 or later; USB.
Price: £39.99 including VAT.
Star Rating: ★★★★/8.3

Crystal Optical

Manufacturer: Lindy (016 42 75 4000) www.lindy.com
Pros: Three buttons; scroll-wheel.
Cons: Rock & Roll motion is tricky to get used to; OS X software not ready.
Min specs: OS 8.5 or later; USB.
Price: £25.99 including VAT.
Star Rating: ★★★/6.9

MiniPRO Mouse

Manufacturer: Contour Design (020 8731 1410) www.contourdesign.com
Pros: Two buttons; tiny; silver coloured; carry case.
Cons: No scroll-wheel; OS X software not ready.
Min specs: OS 8.5.1 or later; USB.
Price: £32.90 including VAT.
Star Rating: ★★★★/7.7

MouseMan Traveler

Manufacturer: Logitech (01753 870 900) www.logitech.com
Pros: Two buttons; tiny; stylish; carry case.
Cons: Scroll-wheel a bit stiff; OS X software not ready.
Min specs: Mac OS 8.6 or later; USB.
Price: £39.99 including VAT.
Star Rating: ★★★★/7.9

Lift up your mouse. Does it have a little ball underneath? If so, you've got problems. Ever notice that your cursor sticks, jumps or refuses to budge? That's because the little ball is dirty or damaged. You could keep cleaning the ball with washing-up liquid, or you could disconnect the mouse and chuck it in the bin. It's ancient history. All mice these days are optical, for good reason.

Optical mice don't have a gunge-collecting ball on their bellies. Instead, a light captures information as you move the mouse, delivering smooth, precise and fast tracking for your cursor. As long as your desk isn't a mirror, an optical mouse is always best.

Today's Macs ship with Apple's optical Pro Mouse, which is cool-looking but lacks multiple buttons or a scroll-wheel. Two- and three-button mice are popular on Windows PCs, which have long taken advantage of the extra finger actions. Once you've started using a multiple-button mouse, you'll soon get used to the time-saving benefits. You've got more than one finger (apologies if you don't), so use them.

You can assign your most common computing tasks to the extra buttons – crop images in Photoshop, open documents, send email, save, etc. Wouldn't it be easier to do these with a single click rather than mouse-up to the menubar or hold-down ⌘-option-H?

The scroll-wheel is even more of a boon. You shouldn't ever have to worry about those little arrows on scrollbars anymore. Simply move the mouse's scroll-wheel this way and that, and you're saving valuable mouse miles.

We gathered five of the latest Mac-compatible mice into a veritable test nest. *Macworld's* previous recommended mouse was Microsoft's Wheel Mouse Optical (£25). This three-button scroller is great, if a little too beige for Macs. Now, Microsoft has a couple of new mice that feature much-improved technology.

IntelliMouse Explorer/Optical

If you thought that losing the little ball was as far as mouse technology went, think again. How about getting rid of that cable that tethers your mouse to the keyboard…

Microsoft's Wireless IntelliMouse Explorer (pictured above) frees you from too-short or too-long cables. Install the software, and plug-in a receiver to your keyboard (or other USB port). You can then place the wireless mouse up to six feet away – useful for projector-based presentations, where anyone in a boardroom could take control of the cursor. Without the trailing cable, you save far more desk-space than you'd expect.

The shape is bulky but comfortable, with palm and finger support and thumb scoop. Sadly, it's less comfy for left-handers.

Both the five-button Wireless IntelliMouse Explorer and IntelliMouse Optical utilize Microsoft's IntelliEye technology, which captures 6,000 pictures per second to calculate the cursor's position on screen – compared to most other optical mice, which capture only 2,500 pics per sec. I can't say that I ever noticed that my old optical being slow, but it's easy to notice the speed increase in the new MS mice. According to Microsoft, the human hand can move the mouse up to 30 inches per second – but most optical mice can manage only 14 inches. IntelliEye can handle 37 inches per second, and also increases accuracy.

The software – which lets you customize the button settings and scroll-wheel speed – unfortunately doesn't yet work with Mac OS X. Microsoft claims this will be ready by the time you read this, but do check before purchase. The mice do work on X, but you lose the use of all five buttons.

Lindy Crystal

According to Lindy, its Crystal Optical Mouse features "Stealth Technology" and "Rock & Roll". The Stealth means it's streamlined, which I guess it is – but so what? The Rock & Roll is either Lindy's secret weapon, or just weird.

Like Apple's Pro Mouse, the Crystal has no buttons, but relies on you gently depressing the whole mouse. Lindy's trick is that you can "roll" the mouse on both sides – thus gaining an extra "button". The third is the clickable scroll-wheel.

While the single-push Pro Mouse is easy to get used to, I couldn't get my wrist round the Right and Left rolls. I ended up using the scroll-wheel to click – and that's a bit stiff, so led to a few accidental page slips. Maybe you'd be better at Rock & Roll than me, but I'd definitely try one before buying.

Although it captures just 1,500 pictures per second, I didn't notice much of a cursor slow down. Lindy says X-ready software will ship December 15.

Contour MiniPRO

I'm only slightly better with a laptop's trackpad than I am with Lindy's Rock & Roll. I just have to carry a mouse around with a PowerBook.

Contour's tiny-but-able two-button MiniPRO Mouse is now available in "titanium colour" to complement Apple's PowerBook G4. Titanium lovers will adore this mouse for its colour, but mainly as a trackpad alternative. It comes with a sturdy Pack 'n' Go carry-case, which protects the



mouse, but does bulk-out the package. Yet again, this mouse is not yet fully OS X compliant.

Logitech MouseMan Traveler

Another mouse for laptop owners is Logitech's MouseMan Traveler. Unlike Contour's plastic MiniPro, the MouseMan has actually got some silvery metal on it – again, complementing the titanium PowerBook G4. This small mouse is undoubtedly the most stylish of the lot.

Unlike the MiniPRO, it does have a scroll-wheel – although this is quite scratchy, as if it needs oiling. Its carry-case is leather-look PVC instead of hard-plastic like Contour's Pack n' Go. Logitech says that the software will be OS X compatible at the start of next year.

Macworld's buying advice

Apple's £45 Pro Mouse is stylish and a real boon for people wanting to ditch a dirt-collecting ball-based mouse. However, third-party alternatives are more compelling – especially those from Microsoft. Once you're used to a scroll-wheel, for instance, it's difficult to go back to a mouse without one. iBook and USB-based PowerBook users can use any of these mice, but will probably go for either the Contour or Logitech laptop mice. OS X users should wait until the mouse software is upgraded – otherwise, they won't be able to programme the other buttons.

Simon Jary



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Multimedia 3D-modelling and animation application

LightWave 3D 7b

Publisher: NewTek www.newtek.com
Distributor: Gomark (020 7731 7930)
Pros: A ton of new features; improved OpenGL support; giant manual; faster.
Cons: No tutorial; difficult for new users.
Minimum specs: Mac OS 9, 284MB RAM; Mac OS X 128MB RAM; PowerPC G3; GeForce 2 Radeon graphics card.
Price: £1,499; £299 upgrade from 6.x. (Both prices exclude VAT.)
Star Rating: ★★★★/8.5

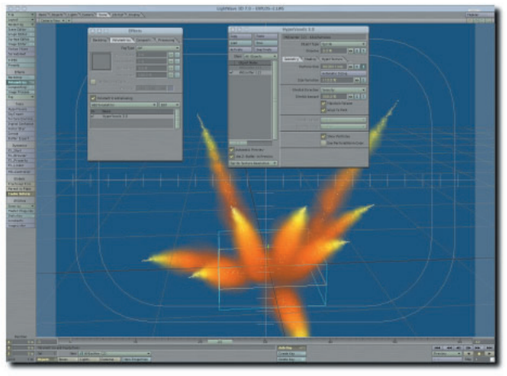
If you want to do professional broadcast, or even movie animation and effects, there are only a handful of Mac 3D-applications that are up to the job. LightWave is one of them, and, for the first time, the Mac version is equal to the PC version in every way.

Version 7b has crammed even more functionality into the already bulging capabilities of LightWave. In an attempt to make these functions more accessible, most are now shown in the screen interface. Many of the quirks of previous LightWave versions have been addressed. For example, making a basic bevelled box is now simplicity itself, with radius and segment settings in the Box Tool. Previously, it required much fiddling and a lot of polygons. It also now supports TrueType fonts properly.

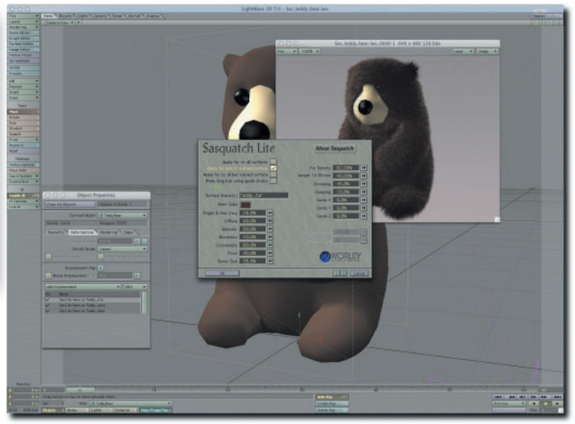
Real-time preview

OpenGL support is much improved, so now many of the previews happen in real time rather than having a delayed update. This helps when modelling using the weight feature, which enables you to build curved surfaces by eye.

One of the new features is the helix tool, which provides an easy way of making helix objects such as springs. There is another tool called spline guide, that gives you a new way of working with curved objects. This lets you manipulate an object by drawing a spline along an axis, which can be curved to reshape the model.



Flame and fireworks
All the traditional particle effects are still available, but now there are new fluid dynamics to mimic pools of water or other liquids.



Bigfoot
Sasquatch is a fully fledged and rather expensive plug-in that enables LightWave to make fur and hair. Lightwave 7 comes with a cut-down version that offers basic fur effects, and gives a good idea of how powerful the full version is.

It doesn't offer any new abilities as such, but is a new way of modelling complex shapes. There are over 150 new tools like these, and many of them are instantly accessible.

The animation functions have also been improved. A new feature called the Motion Mixer offers a non-linear editor for motions. For example, if you created a character walk, you could extend the walk using the Motion Mixer and then add other gestures – a wink, for example – while the character walks. The movements can be imported from Poser Pro too. You can add as many tracks as you like, and the model will smoothly mix between movements. This is a powerful tool that greatly improves the functionality of LightWave as a character-animation tool. This has been a weakness of LightWave in the past, but NewTek is doing a lot of work to make character animation easier.

Particle pool

Particles and fluid dynamics have always been good in LightWave, but for the first time, you can model liquid as a volume rather than a particle emitter. Previously, fountains and waterfalls could be made using particle emitters, but the liquid wouldn't pool. Now you can create liquid that can be poured from one glass to another.

A favourite plug-in, Sasquatch from Worley Labs, now has a light version included in LightWave. Sasquatch is a plug-in hair and fur modeller – the full version gives amazing results. SasLight – the version included – is less adaptable, but still lets you create impressive fur and hair.

Digital Confusion is the name of a feature that fakes depth-of-field effects. Depth is used by photographers to direct attention to a particular point. It creates a sharply focussed point at the object, while the rest of the image is out of focus. You can create this effect using LightWave's normal camera-setting, but adjusting the camera's focal length is pretty complicated. Digital Confusion lets you decide which object to focus on and automatically creates a depth-of-field effect – so you can ignore LightWave's camera settings. Better still, you can attach the focus to a null object (an invisible placeholder) and animate the depth of field. This is simple to do, and extremely effective.

Rendering refresh

Rendering features more options than ever. There is a new radiosity algorithm, based on Monte Carlo methods. Radiosity is a type of rendering beyond simple ray-tracing. It also reflects the colour of objects – so a white box next to a red wall will have a red singe from the reflected light of the wall. For the non-mathematicians among you, Monte Carlo methods use random numbers to approximate an answer to a problem. In rendering terms it means that soft shadows and motion-blur quality is improved. However, that improvement is in quality, certainly not speed. Radiosity is only for the patient.

One way to speed the process is using gMIL to assign radiosity rendering on a surface-by-surface basis. This avoids the need to render a huge scene using radiosity when it's needed in only one place.

When radiosity is used with the HDRI environmental-lighting information, LightWave can create some incredibly realistic scenes. An HDRI or High Dynamic Range Imaging file is like a high-resolution QuickTime VR file. A scene is captured photographically at various f-stop (aperture) settings, and compiled into one file. This HDRI file contains all the light information of a scene, which can then be used to create naturally lit objects. This is especially good for adding graphics to a live scene without looking conspicuous.

The scripting features have been improved, using a new version of LScript commander. This allows repetitive jobs to be automated, though this is a feature aimed at a select few experts in animation. Most things don't require the user to know about scripting, which is something of a relief for me.

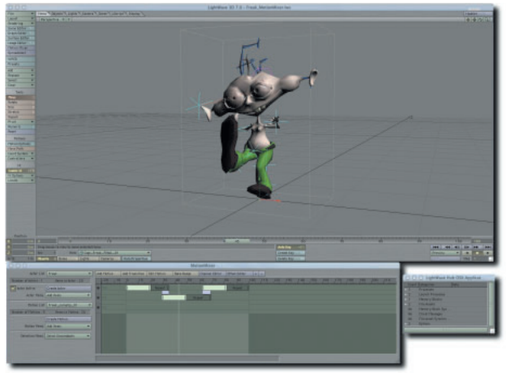
There are more features than I have room to mention here, and few people will get to grips with them all.

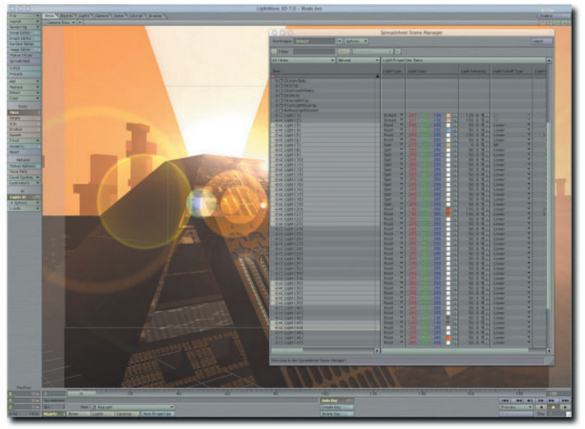
The main problem with LightWave isn't its capabilities though, it's the usability. Version 6.5 changes a lot of shortcut keys, and will likely annoy long-time users. This wouldn't have been so bad, but the tutorials were written for 6.0, and required the keys to be remapped to the old settings to work. This made life rather difficult for novices. Now, version 7 doesn't even have a tutorial – although it does have an excellent manual. Despite being a huge tome written in a way that beginners can understand, it doesn't address the needs of first-time users. This could be disastrous for NewTek, because, even with a big manual, it'll be difficult to figure-out LightWave.

Macworld's buying advice

Despite the price difference, LightWave's main competition is Alias|Wavefront's £6,360 Maya. Both are necessarily large and complex applications, and neither are easy to get to grips with. However, there are more resources to help you learn Maya. NewTek needs to address the absent-tutorial problem – even a basic one would be better than none. Until then, NewTek is in danger of putting off new users. If you're already using LightWave and have got to grips with the new keyboard shortcuts of 6.5, then you're in for a treat. This is a significant and very powerful upgrade that will speed work.

David Fanning





In the mix
The Motion Mixer (above) is a great tool to assist with character animation. You can set out different motions, such as walking or skipping, and put them together in a non-linear editor.

Spreadsheet sorting
Some projects get unwieldy, with thousands of objects to keep track of. The new spreadsheet feature (left) means that objects can be grouped, labelled and sorted to keep them manageable.

Media tracker

Discalog 1.21

Publisher: CatBase Software (0700 228 2273)
Pros: Cross-platform compatibility; powerful database functions; good online help.
Cons: Complete lack of user-friendliness; no folder-level display.
Min specs: 20MB of free RAM.
Price: £25 (excluding VAT)
Star Rating: ★★★★/7.1

CatBase Software is well-known in professional circles for CatBase 4, its catalogue- and directory-publishing solution. Discalog is programmed from the same relational database system, 4D's 4th Dimension.

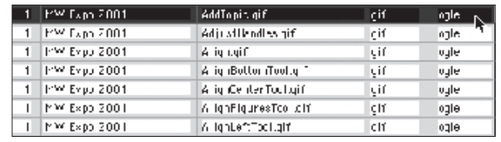
Discalog catalogues the contents of any computer media, from floppies to complete hard disks, even across a network. In doing this, it captures information about every file, including file name, path, file size/type, and date created/last modified – plus user-creatable categories and keywords.

The categories side is particularly useful. For instance, you could select all text-based file-types and organize them into a documents category for cataloguing. The ensuing database files can be shared between the Mac and Windows machines.

The four main facilities are available from the floating palette: cataloguing, quick search, detailed search, and file-type detective. Cataloguing a volume requires a minimum of set-up, although one particular preference is crucial to the usefulness of Discalog – the option of indexing just a file name or a number of enclosing folders as keywords. Take the typical example of cataloguing a stock-photo CD library. Each image has a generic name along the lines of photo001, photo002 and so on, but lies within a set of carefully-named folders such as summer, winter and the like. Discalog can include such folder names as keywords to as many levels as you choose. While cataloguing a volume, the list of keywords is constructed to help with later searches.

With a catalogue containing a set of volumes, quick search comes into play. This simply looks for a file that has a certain keyword associated with it – rough-&-ready if you like. Detailed search takes this a step further, by allowing you to set precise criteria for keywords, file names and types, create and modify dates, and so on. This is similar to the Mac's old Find File utility.

File detective, the floating palette's final item, checks each volume for applications and lists their file creators. This allows you to use the creators as category types and to catalogue accordingly.



Single file
Discalog has some powerful databasing features, but a lack of user-friendliness, with all files shown in a flat form rather than hierarchically within folders.

Macworld's buying advice

In terms of a pure database of files, Discalog is very powerful and includes file deduping, the ability to set-up and ignore small words from the keywords list, a reporting facility and online help. But there's a serious downside: lack of user-friendliness. It uses a flat database-style, rather than the Mac hierarchical one.

Vic Lennard

Cover CD



Try Discalog 1.21 for yourself – the demo is on this month's Macworld cover CD.

Memory-card reader

FireWire CameraMate

Publisher: Microtech www.microtechint.com
Distributor: Digital First (01494 88 33 99)
Pros: Speedy FireWire connection; seamless operation.
Cons: CompactFlash only.
Min specs: FireWire; PowerPC G3/G4; Mac OS 8.6 or later.
Price: £59.99 (including VAT).
Star Rating: ★★★★/7.5

With digital photography now mainstream for computer users, many of us are more familiar with memory cards than we are with fiddly rolls of 35mm film.

Getting the pictures from your camera isn't difficult, but can take time. Most modern digital cameras allow you to download straight to your hard disk via a USB cable; and improvements in Mac OS X 10.1 make this even easier. Another popular way to get pictures from the memory card to your Mac is via a dedicated card-reader. Remove the card from your camera, stick it in the card-reader, and drag the pictures to the hard drive.

That's a lot easier than rewinding film, putting it in that little plastic canister it came in and that you put somewhere safe (but where?), getting to the nearest Boots, queuing up, depositing film, going back to Boots, queuing up again, paying large a sum of money for fast prints, getting home from Boots, etc.

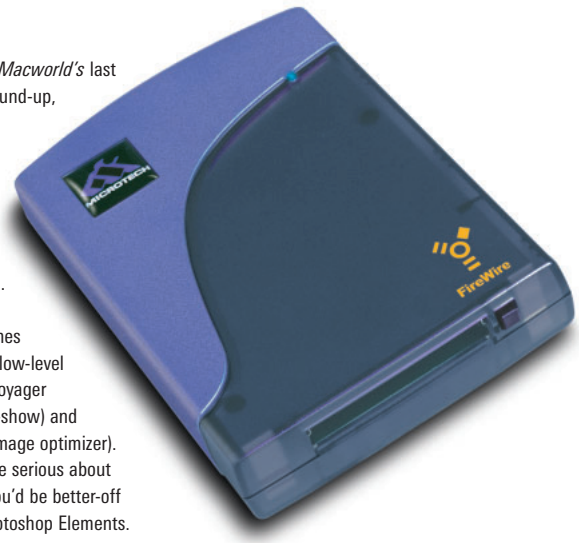
But even the swift delivery that digital cameras offer can seem like a drag when you get used to it. USB is nippy, with a data-transfer rate of about 1.2MB per second (MBps). But those of us who use 128MB and larger cards would jump at a faster connection method.

The obvious solution is FireWire, which is capable of about a 5MBps data-transfer rate. Unfortunately, very few digital cameras come with a FireWire connection – which is more the preserve of the digital camcorder.

The next best thing is a card-reader that connects via FireWire rather than USB. And Microtech's popular CameraMate is now available with FireWire.

In *Macworld* tests, the FireWire connection was more than twice as fast as the USB connection – downloading 25MB of high-res pictures in 13 seconds, compared to the USB version's 34 seconds.

The USB CameraMate included slots for both CompactFlash and the rival SmartMedia format. This FireWire version is for CompactFlash only. This is a shame for SmartMedia users, but sensible for Microtech as, in *Macworld's* last digital-camera round-up, the chunkier but larger-capacity CompactFlash format was supported three-to-one over SmartMedia.



FireWire CameraMate comes with a couple of low-level software tools: Voyager PhotoFolio (slide-show) and PhotoGenetics (image optimizer). However, if you're serious about image-editing, you'd be better-off with Adobe's Photoshop Elements.

Macworld's buying advice

I use my digital camera a lot (mainly in conjunction with Apple's free iTools solutions), but I can't say that the speed of my USB card-reader bothers me too much. The FireWire card-reader is noticeably faster than the USB model, but I wouldn't shell-out £59 to replace it. However, if I was relying on a USB cable or had just bought a CompactFlash-based digital camera, I'd definitely pay the extra £10 for the faster connection.

Simon Jary



Sci-fi compression
The recent Star Wars Episode II trailer was compressed using Sorenson Video 3.1.

Professional QuickTime Codec

Sorenson Video 3.1

Publisher: Sorenson Media www.sorenson.com
Distributor: Strawberry Global Technology (020 8239 1134)
Pros: Dramatically improved image quality; advanced compression options; multiprocessor support.
Cons: VBR encoding requires Cleaner 5.1.
Min specs: Mac OS 9 and OS X.
Price: £359 excluding VAT.
Star Rating: ★★★/6.8

QuickTime 5.0.2 includes a free copy of Sorenson Video 3 – the latest version of the most widely used codec for compressing and decompressing Web-based QuickTime video – but multimedia professionals should consider paying £359 for the Professional Edition.

Its advanced compression settings yield even better image quality, and it has a few features the free version lacks (for example, the ability to add colour watermarks to a movie as you compress it).

This version takes advantage of multiple processors – a useful feature when you're encoding live events. One of the Professional Edition's best capabilities – variable-bit-rate (VBR) encoding, improving image quality – will be inaccessible until Discreet's Cleaner 5.1 ships.

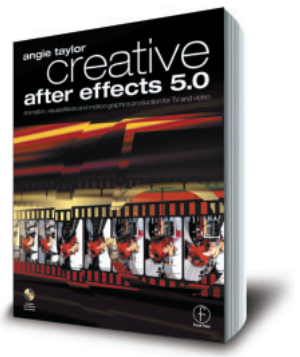
Macworld's buying advice Sorenson Video 3.1 Professional Edition is a superb, if pricey, codec for low-bit-rate applications. QuickTime pros who create high-quality Web video will want it.

Jim Heid

How-to multimedia book

Creative After Effects

Publisher: Focal Press www.focalpresscom
ISBN: 0 240 51622 2
Price: £27.50
Star Rating: ★★★★★/9.1



There's nothing more frustrating than devising the perfect solution to a design brief and then not knowing how to fully realise it. If you want to be able to create eye-catching motion graphics then *Creative After Effects 5.0* by Angie Taylor should be the answer.

Just published by Focal Press, this is the book all After Effects users have been waiting for – written by an animator for animators. Taylor has obviously thoroughly researched her subject, and engages the reader with her personal approach. The book is well designed with clear, easy-to-follow instructions, and plenty of screen grabs. It will soon have even a complete beginner enthused and ready to create their own sequences.

What's different to other manuals is the lack of the usual 'do this, then this, to get this' feel. For technophobes like me, it allows – indeed insists – on the reader having fun in creating sequences and anticipates when you may come unstuck with uncanny accuracy.

The free CD (Mac and PC) is full of goodies, including some great technical guides and links. Taylor has included demo versions of the software, and all related files necessary to complete the tutorials.

It's great for those of you who already use After Effects to improve your skills, and via the associated Web site share hints and tips for an easier life. While it doesn't cover everything – and couldn't – it certainly gives the best grounding possible in comparison to other books available.

Macworld's buying advice I defy anyone in computer animation and motion graphics not to benefit from this excellent book.

Kerry Cathro

Musical emulator

EVP88 Vinatge Piano

Publisher: Emagic
www.emagic.de
Distributor: Sound Technology
(01462 480 000)
Pros: Provides very useable Rhodes sounds for use within Logic Audio.
Cons: Shame about the Wurlitzer sound.
Min specs: Emagic Logic Audio/MicroLogic AV 4.0 or higher; Mac OS 8.6 or later; USB requires at least OS 9.0.4; 128MB RAM.
Recommended: G3 or G4 processor; 256MB RAM; digital-audio card; MIDI interface.
Price: £169 including VAT.
Star Rating: ★★★/6.4

The Fender Rhodes and the Wurlitzer electric pianos are two of the most popular keyboards used in today's music. However, if you've ever tried carrying a Fender Rhodes Suitcase 88 electric piano, you probably needed a visit to the osteopath afterwards. Even the smaller Wurlitzer 200A electric piano is awkward to lug around.

The idea of being able to carry these instruments around inside a laptop to use at gigs would mean no more sprained vertebrae – and to be able to use them on my desktop system would provide all the benefits of MIDI control and ease of recording to hard disk.

Several presets are provided, including Suitcase Mk I, several Stage Pianos, a Wurlitzer 200A, a Hohner ElectraPiano, and some variations.

There is an incredible range of control over the sounds. You can set the volume of the 'bell' part of the note and how much 'damper' noise you can hear; and set a decay time for the notes and a release time for the damper. You can also apply varying amounts of 'stretch' tuning at the high and low ends of the keyboard, and random tuning variations for added realism.

You can also apply effects including Chorus, Tremolo and Phaser; Bass and Treble EQ, and use the Drive and Tone controls to emulate the sound of a valve amplifier. You can also set the number of



voices (that is, the polyphony) up to a maximum of 88 notes, and you can tune the 'instrument' by + or - 50 cents. In short, it's the kind of controls to die for with a real Rhodes or Wurlitzer.

Of course, what we all want to know is whether to throw away the hardware versions. The first thing I did was to run back and forth from my Rhodes Suitcase 73 and Wurlitzer 200A pianos to the EVP88. I was initially impressed with the EVP88 Rhodes sounds, which definitely sounded good, but felt rather disappointed with the Wurlitzer. Then I tried the real Wurlitzer, and found out why. The richness of the sound of the real instrument is way, way better than the EVP88 'Wurly'. Similarly, there is a much 'bigger', more interesting sound from the real Suitcase 73.

Macworld's buying advice

If you don't own the real instruments, then the EVP88 at least gets you into the right ballpark. If you're not too concerned about absolute realism, you'll find the Rhodes sounds very useful – and the controls and effects provide plenty of variation.
Mike Collins

Sample library

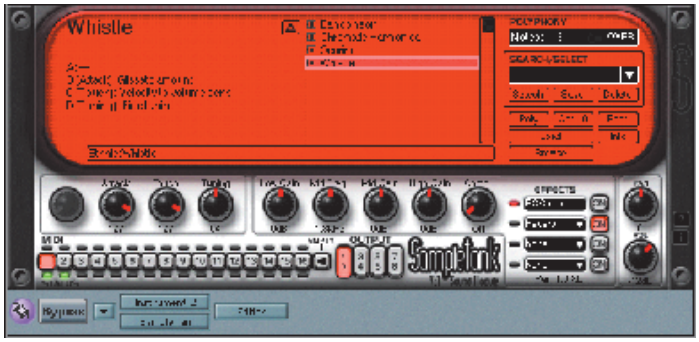
SampleTank XL

Publisher: IK Multimedia
(01223 234 414)
www.ikmultimedia.com
Pros: Samples provided are first rate.
Cons: Only two outputs work in Logic Audio.
Min specs: Cubase VST 4.1.1 or later, Logic Audio 4.5 or later, or any other sequencer compatible with VST Instruments; Mac OS 8.5 or later; 128 MB RAM; 240MB free hard-disk space.
Recommended: G3 or G4 processor; 2GB free hard-disk space; ASIO audio card.
Star Rating: ★★★★/8.8

Some of the biggest complaints I've heard from users of software samplers is that they're very fiddly to use and set-up, and that it can be awkward to quickly browse and load samples. Also, the quality of the factory samples provided is often questionable. At last, someone has come up with a VST plug-in that addresses these issues.

IK Multimedia's SampleTank offers 32-bit quality playback with up to 128-note polyphony (depending on the CPU). The sample library in the XL version comes on four CDs, and includes more than 450 sounds – encompassing loops for house and techno, a good selection of electronic and acoustic drums, percussion, ethnic instruments, synths, guitars, basses, strings, brass, woodwinds and keyboards; just about everything you might need to put music together. And if this isn't enough, you can import Akai S1000/3000 sound banks, and convert them using the separate SampleTank Converter application.

SampleTank also features up to four effects that can be inserted on each sound, and all the effects parameters are MIDI-controllable. There are 20 effects provided, including: Compressor, Equalizer, Reverb, Ambience, Reverb Delay, Delay, Filter, Wah-Wah, Chorus, AM and FM Modulation, Flanger, Autopan, Tremolo, Rotary Speaker, Lo-Fi, Distortion, Phonograph and Slicer.



The interface is very basic, which helps with the speed of use. In Cubase VST, instruments can be routed via four separate stereo outputs, although in Logic Audio only stereo outputs are supported. I checked SampleTank using both of these, and was stunned at how fast the sounds load – just double-click on any sample and there it is, ready for you to play instantly.

The TR808 samples are the best I've heard – and I have a real TR808 to compare them with! The three acoustic drum kits all have long-decaying cymbals, full-sounding toms and very usable sounding bass and snare drums. The Studio kit does sound exactly like a kit played in a small, dead studio. The DX piano sounds just perfect, and the acoustic grand piano is very usable. The Pop Violins sounds just like the cheap string synthesizer that I used in the 1970s and the B3 organ sounds very much like a B3 – again, I have a real Hammond to compare with. There is a great percussion selection as well, with ethnic instruments such as the Darbuka and Dumbeck, triangle, tambourine, shakers – and great congas. The best thing about these is that you get several different types of slaps and hits, unlike most samples, which provide just two or three main sounds. In short, the sound library is excellent.

Macworld's buying advice

SampleTank is extremely easy to use, the samples sound great, and a wide range of useful effects is provided. This is one plug-in that I can unreservedly recommend.
Mike Collins

25% discount on top games to all Macworld subscribers – register at www.macworld.co.uk/games



Text adventure... with pictures

Zork Grand Inquisitor

Publisher: MacPlay www.macplay.com
Distributor: Softline (01883 745 111) www.softline.co.uk
Pros: A gentler way of adventuring, playable on a low-spec machine; no need for a fancy graphics card.
Cons: A little dated; can be frustrating without a cheat sheet.
Min specs: G3; 96MB RAM; OS 8.6 or later, including OS X.
Price: TBA.
Star Rating: ★★★★/7.5



Way back in 1980, the company I worked for employed a little Scottish guy who used to programme a computer to control a video-editing suite. When he wasn't using his amazing skills on his home-made wooden PC, I'd play a game on it – called simply Adventure. This was my first adventure game, programmed in FORTRAN. it was the start of an addiction that lasted for years. Later, on my ZX81, I would play the same text-based adventures, but that was 20 years ago, and things have moved on a little. Or have they?

Adventure first appeared in 1977, but the original version of Zork was hot on its heels. Since then there have been at least eight new Zork adventures, and Grand Inquisitor is the latest one. I'm not sure which adventure first moved away from the text-adventure format, but even this one isn't far off the original format. The familiar, wandering around and picking-up stuff is still the order of the day, despite rather-more advanced graphics.

Your adventure starts in Port Foozle, where you're instantly in breach of a curfew. This makes things a little difficult, and the inhabitants a little crabby. Your first job is to get some adventuring equipment, and that involves the usual finding of objects and using them on other objects with entirely unpredictable results. You either cheat using a walkthrough from the Internet, or you spend a long time using trial and error. Either method is a bit depressing, you are either a cheat or you spend hours trying to progress.

When you interact with other characters in the game, you'll find that there's real video footage of live actors. This is an interesting way of dealing with characters, though it leaves the options for interaction rather limited. The actors used are a step-up from the usual Z-list celebrities – but not far up.

Erick Avari will certainly look familiar, though you probably won't be able to place him unless you are a regular viewer of *Stargate SG-1* – although he does have titles such as *Planet of the Apes* and *Independence Day* to his credit. Another face to recognize is Dirk Benedict, whose career peaked playing "Face" – the suave one in *The A-Team*. Further down the list of credits is Rip Taylor, a Vegas veteran and regular guest on *Hollywood Squares* (US version of *Celebrity Squares*).

Actually Zork isn't a bad game, it's just dated. After a while you get wrapped up in the story, and there are moments of tension just like in action games. There's still something about traditional adventure games that's addictive. Before long you'll find yourself looking at discarded tin cans in real life, wondering if they might come in handy later.

Macworld's buying advice

This isn't a must-have game, but it may have a special appeal to those of a certain age. It's slower-paced than most modern games, and there's certainly less carnage. If you've been a fan of Zork over the years, you'll know what kind of thing to expect. If you haven't had the pleasure before, the original text games are available as a free download from various Web sites.

David Fanning

High flyer

Each scene is rendered in a QuickTime VR style, so you can spin on the spot but not walk around. You'd think that this would allow each scene to be rendered to a higher quality than say Giants or Tomb Raider, but there isn't much in it. Myst uses a similar method of pre-rendering scenes, but Zork doesn't even approach the quality and detail of Myst.

Mac Gamer's Club continues page 72

Macworld reviews all the best games as soon as we get our hands on them. As we know how much fun they are, we want everybody to enjoy the finest Mac entertainment, as well. All subscribers to *Macworld* are entitled to register for **FREE** membership to the club – all you need to do is go to **www.macworld.co.uk/games**, input your email address and subscriber number, and you'll automatically be entitled to a generous 25 per cent discount on many top Mac games*. If you're not a *Macworld* subscriber, register your interest at **www.macworld.co.uk/games**. We'll then send you details of how you can become a fast-track subscriber, with immediate membership to the Gamers' Club.
* Only games distributed by Softline are available at the 25 per cent discount. For the full list of discounted games, go to **www.macworld.co.uk/games**.

3D shooter game

Giants: Citizen Kabuto

Publisher: MacPlay
www.macplay.com
Distributor: Softline
(01883 745 111)
www.softline.co.uk
Pros: Excellent graphics and game play; interesting selection of weapons and spells.
Cons: Groan-worthy jokes; dodgy accents; no orcs.
Min specs: Mac OS X 10.0.4 or later; 3D video card with 16MB RAM; 128MB RAM.
Price: £39.99 (including VAT).
Star Rating: ★★★★/8.7





Giants is the first big commercial game to require Mac OS X, so it will be interesting to see how it sells. It's a sort of comedy shoot'em-up, with gor' blimey Cockney spacemen and funny Scottish aliens. I say funny – but we're not talking belly laughs here. Comedy's a funny old game, and this funny old game is trying a bit too hard – without raising a laugh. I'm sure it seemed like a good idea at the time, but it is more likely to raise groans than grins.

Gameplay, however, is a different matter. You start by playing a Mecc, one of the Cockney spaceman I mentioned earlier. I say Cockney, but the voices used are of the worst American mockney. I suspect they are voiced by ex-pat English people who have lived in the US so long they can't even fake an English accent any more. If you remember Daphne's brother in *Frasier* you'll get the picture.

You're gently eased into the game by small foes, but you have equally puny firepower. The first baddies you come across are the Rippers – fast and ferocious plant-like things that consist mostly of teeth. Once you attract their attention, they start tunnelling like Bugs Bunny on speed, popping up in front of you to bite and spit explosive plasma balls. They aren't too difficult to defeat, but they tend to gang up on you. The good thing is, once you kill a full-grown Ripper you can gain energy points from the remains.

In the first mission you rescue a young Smartie, a native super-intelligent (compared to the Meccs, at least) alien. He gives some guidance on how things work, and later in the game the Smarties will give you bigger and better weaponry.

For some reason, the Smarties tend to be Scottish – though I guessed this from the tartan kilt rather than the accent, which is worse than the mockney Meccs. The performance makes Mel Gibson sound like a native by comparison. Thankfully, the accent fades as the game progresses.

You're encouraged to help the Smarties defeat the evil Sea Reapers. The deal is pitched by a Smartie claiming that he needs help because "he is old and his balls are saggy". Nuff said…

Sea Reaper men are a more formidable enemy. They shoot you from great distances and hide when you try to shoot back. By this point, you've been joined by your other Mecc pals Tel, Reg, Gordon and Bennet. As a team you stand a better chance of defeating the baddies.

One thing I miss is the ability to set the difficulty level. I tend to play games at the easy settings because I don't have much leisure time. Fortunately, this game isn't impossible – but neither is it easy.

You may be wondering why I haven't mentioned any Giants. Actually, I was wondering where the giants were, too. In fact, you don't get to see any giants until the end of the Mecc missions. Even then, it's only a brief glimpse. Then you get to play a Sea Reaper, Delphi, daughter of Queen Sappho (not to be confused with the poet of Lesbos).

Once you've mastered the jet pack and weaponry of the Meccs, you need to change gear and master the powers of Delphi. Delphi is armed with a bow and arrow – quite a step down from the machine guns and rocket launchers of the Meccs. You do get magic though, so you can get tooled-up with wizardry instead of weaponry.

Being a sea creature, swimming is fast (in a *Man from Atlantis* kind of way) and also life-giving. If you're getting low on life, just take a dip in the nearest pool and you'll be healed. Coping without a jet pack is a pain at first, but after a short while you get the ability to use blur speed. Simply aim yourself and hit turbo, and you're launched at the target area.

Only when the Delphi missions are completed do you get to play the part of Kabuto the giant. Despite being an enormous mythical beast, his missions aren't a walkover. The Meccs and the Sea Reapers have plenty of firepower and spells to spoil your trampling. He is, however, a very bad giant. Kabuto will kill or eat (or both) everyone in his path. Somehow Kabuto must have been watching WWF (the wrestling not the wildlife fund), because he has some wresting moves. Being so much larger than your opponents is great for hitting whole groups of enemies with one swipe.







Macworld's buying advice

Despite the not-very-funny humour and the Dick Van Dyke accents, Giants is a great game. You need a fairly up-to-date Mac to get the best from it, and you'll need OS X. But the game-play is a new slant on the average slaughter fest. The graphics are impressive and fast, and the multitude of attack methods keeps things interesting.

The ability to play the game from three different characters is fun. I was a little disappointed to find that I had to wait a long while before becoming Kabuto, but it was worth it. You might want to think twice about letting young kids play it, as you have Smarties complaining about their saggy bits. However, the under-14s are the only people likely to find the humour hilarious, so what the heck.

David Fanning

Top Ten UK Games

1 The Sims



2 Baldur's Gate II



3 Alien versus Predator



4 Tomb Raider Trilogy
5 Sheep
6 American McGee's Alice
7 Tony Hawks Pro Skater 2
8 Escape from Monkey Island
9 Myst III Exile Collectors Edition
10 The Sims House Party

List supplied by Softline

Choose the right Mac for you

Desktop or portable? Consumer or professional? CD-ROM or DVD-R? Your questions answered.

By Simon Jary

You want to buy a Mac. Either you're totally new to computers, you've got a Windows PC and want something better, or your current Macintosh is getting on a bit. Maybe your Mac isn't even that old, but you can't live without the latest cool designs. Whatever your reasons for buying a new Mac, today's Apple line-up offers simplicity of choice within a reasonably wide range.

However, that simplicity of choice can be deceiving. A quick scan of the models on offer might point to the £699 iMac as the one for you. But then you notice that it doesn't have a CD-RW, and you're keen to burn some of your own CDs. And maybe that screen won't be big enough for you if you want to start doing more than getting your digital pictures ready for your Web site. Maybe a Power Mac offers you more flexibility in performance and display size... Or a PowerBook, with AirPort 2.0 networking, would let you browse the Web in your garden shed...

As you can see from the current Mac family tree opposite, you'll come across several key junctions of doubt on the way to making the right choice. Are you a consumer or professional? Do you need a portable or desktop machine? Which speed model should you buy? Does the size of hard drive or quantity of memory matter?

Each Mac has its advantages, and one of them (maybe with some tweaking) is perfect for you. Which one that is is usually dependent on several factors: budget, function, form factor, performance, looks, and features. *Macworld* looks at your choices, and guides you through all the questions that you'll be asking yourself along the way.

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Desktop

Just because you don't use your Mac for work doesn't mean you *have* to buy a "consumer" computer. The pro models offer greater flexibility (especially in choosing larger displays), as well as extra performance and graphics functionality. Serious gamers, for instance, will demand the fastest video cards – which you can swap in and out of the Power Mac's AGP or PCI slots. On the other hand, if your work isn't geared around powerful graphics applications, an iMac or iBook will comfortably handle all your requirements.

iMac or Power Mac G4?

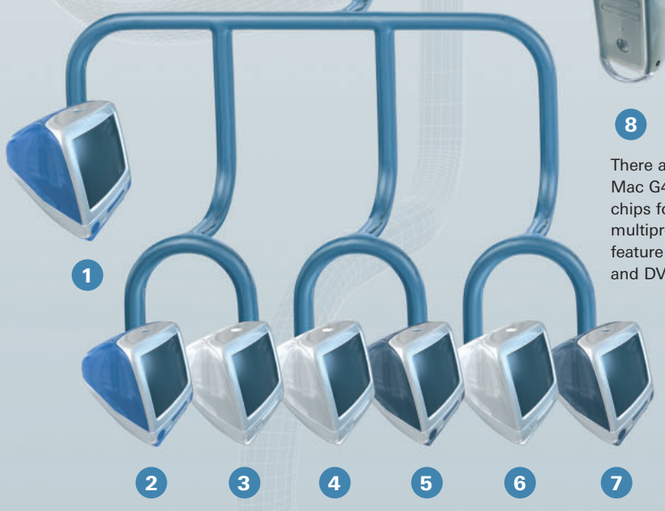
Desktop Macs are less expensive and often more flexible than portable computers. Although it can display only the same number of pixels (screen elements) as the iBook, the iMac's screen images appear larger. And iMac prices start at just £699 (including VAT), which is great value. With the Power Mac, you can add large screens, and power them with the very latest and fastest graphics cards. The Power Mac also lets you add faster, larger hard drives, and up to 1.5GB of memory.

Consumer

iMac

With its built-in screen and cable-tidy stylish design, the iMac is perfectly suited to the home user – especially for Web, email, business applications, etc. With iMovie, the iMac becomes an affordable and powerful video-editing solution. It can handle nearly any Mac application, but professionals may prefer a G4 processor and a larger display. There are four basic models, and several colour choices.

The most obvious difference between the iMac and Power Mac is screen size. The 15-inch display built into the iMac is spacious enough for browsing the Web, email, word-processing, and even editing your digital movies, but can get a little cramped if your apps dump palettes all over the place. You can hook-up another monitor to your iMac, but it will only mirror the built-in screen's display – stuck at a maximum 1,024-x-768 pixels. A Power Mac's screen will display as much as your monitor and video card allow (1,900-x-1,200 pixels with the NVidia GeForce2 MX). And only the Power Mac works with Apple's LCDs.

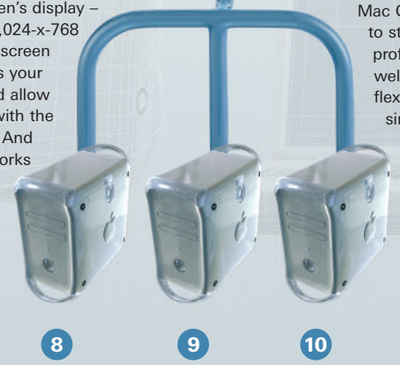


You get only one choice of case-colour with the entry-level iMac, but the CD-RW models offer you choices of Indigo, Snow or Graphite, depending on model. Otherwise, choose between faster processors, amount of RAM and hard-drive size.

Professional

Power Mac G4

The Power Mac's G4 processor is faster than the iMac's G3 – especially for applications optimized for it. With four PCI slots, an AGP 4x slot, spare drive bays, and an easy-to-upgrade case design, the minitower Power Mac G4 is ideally suited to studio-bound Mac professionals. The well-designed tower's flexibility means you can simply swap-out older components as superior cards and drives appear on the market.



There are three basic models of Power Mac G4, one featuring two 800MHz chips for programs optimized for multiprocessing. The top two models feature more sophisticated cache, and DVD-R SuperDrives.

Portable

iBook or PowerBook G4?

Portable Macs take-up less space than desktop computers. You can easily carry them with you to meetings, on holiday, or just out to the garden (where, with AirPort, you'll be able to download your email or browse the Web up to 150ft away from your phone line). The sharp TFT screens allow a surprisingly large viewing area, and the PowerBook can be hooked up to a 21-inch screen when you're based back in the office or studio.

Consumer

iBook

Like the iMac, the iBook runs on a G3 processor, and can handle all but the very high-end applications. It's lighter than the PowerBook, and more compact. The 12.1-inch screen is large enough for most uses, especially Web, email and business applications – as well as games and even video-editing. Its size and full feature set should tempt potential iMac owners who find its portability and size a compelling alternative to the desktop consumer Mac.

Professional

PowerBook G4

The G4 really puts the Power in PowerBook. As you can hitch-up a larger screen when in the office, many Mac pros are happy to use their PowerBook as their main computer – both on and off the road. With its ultra-wide screen and sizable hard drive (plus iMovie or G4-optimized Final Cut Pro), it's the ultimate transportable video-editor. Its stylish but rugged titanium case looks great, too.



There are four basic models of iBook – differentiated by type of optical drive. The entry-level model sports a CD-ROM drive, with DVD-ROM, CD-RW and a combination CD-RW/DVD-ROM drive following. The CD-ROM iBook has a 500MHz G3, and the others go a little faster with a 600MHz chip – but the difference isn't major. However, the 500MHz iBook also has a slower system bus (which shuttles data between interior components), and so the performance gap increases a bit more. All iBook include a 15GB hard drive, except for the top-end model – which boasts a 20GB disk.

Both PowerBooks now feature Gigabit Ethernet (like the Power Macs) for super-fast networking. The 667MHz model has a faster system bus than the 550Mhz model, but the performance gap isn't really big enough to justify the price difference. However, professionals might be tempted by the larger, faster hard drive, and increased RAM. Both models benefit from a limited Double Your RAM offer that runs till the end of 2001.



1 iMac 500MHz CD-ROM

Price: £699, including VAT.
Pros: Superb new low price; all-in-one solution; processor fast enough for any application; iMovie 2; FireWire; free software.
Cons: No built-in CD-RW drive; needs extra RAM; 20GB hard drive reasonable, but not massive for video editors. Extra software bundle and free digital camera not available for this model.
Perfect for: People who don't need a CD burner, and use the Mac for word processing, email, Web browsing, business programs, games, printing, scanning, etc. With FireWire and iMovie 2, this entry-level iMac is capable of digital video editing – but the lack of CD-RW and medium-sized hard disk limit it slightly.
Star Rating: ★★★★★/9.0

2 3 iMac 500MHz CD-RW

Price: £899, including VAT.
Pros: Great price; all-in-one solution; CD-RW; 128MB of RAM; processor fast enough for any application; iMovie 2; FireWire; free software, including special extra bundle available till December 31. Also available until that date, a fantastic offer of a free 2.3-megapixel digital camera for a small shipping fee.
Cons: 20GB hard disk reasonable, but not massive for video editing.
Perfect for: People who use the Mac for word processing, email, Web browsing, business programs, games, printing, scanning, etc, require a built-in CD burner. With FireWire and iMovie 2, this iMac is capable of digital video-editing – but the medium-sized hard disk limits it slightly in this area. The digital-camera offer makes this machine a superb starter package for computer newcomers.
Star Rating: ★★★★★/9.1

4 5 iMac 600MHz CD-RW

Price: £1,099, including VAT.
Pros: CD-RW; 256MB of RAM; iMovie 2; FireWire; large 40GB hard drive; free software (extra bundle available till December 31). Free 2.3-megapixel digital camera offer – see above for details.
Cons: Extra 100MHz processor not giant jump in performance for price above £899 iMac – but extra RAM and larger hard drive make up for this. Not available in Indigo colour.
Perfect for: People who use the Mac for word processing, email, Web browsing, business programs, games, printing, scanning, etc. Best starter for digital-video editors, with its generous RAM and large hard drive. If you plan on using your Mac for video editing, consider this model or the 700MHz model described below. Both come with the digital-camera offer.
Star Rating: ★★★★/8.8

6 7 iMac 700MHz CD-RW

Price: £1,299, including VAT.
Pros: Fastest iMac; CD-RW; 256MB of RAM; iMovie 2; FireWire; massive 60GB hard drive; free software (extra bundle available till December 31). Free 2.3-megapixel digital camera – see above.
Cons: Not as good value as the other iMacs – although RAM and larger hard drive are definitely worthwhile. Unavailable in Indigo colour.
Perfect for: Those using the Mac for word processing, email, Web browsing, business programs, games, printing etc. Great starter for video editors with its extra RAM and giant hard disk. If the iMac is perfect for your requirements, this model is fast and loaded with pro-level heavyweight components. Also consider a Power Mac G4 with a larger screen.
Star Rating: ★★★★/8.7

Budget: Address limitations

The cost of your new Mac will probably be a big decider in which model you go for. Prices start at £595 (excluding VAT), and rise to £2,499. What you get for the extra money is performance, capacity, flexibility, and, on specific occasions, portability.

The least expensive Mac model currently available is the entry-level iMac, which (including VAT) costs a very tempting £699. The entry-level portable Mac is the £1,099 (inc. VAT) iBook. Both sport 500MHz PowerPC G3 processors, and come with 64MB of memory (also known as RAM) and CD-ROM drive.

If these prices sound a lot to you, compared to some of the budget Windows PCs out there, then consider exactly what you get with even the entry-level Macs.

The big difference between a Mac and many bargain PCs is connectivity options and bundled software. Cheap PCs often require extra cards to add functionality. The iMac, like all of today's Macs, comes fully loaded with the latest industry-standard connections and ports, such as USB and FireWire. It's also reasonably cheap to add wireless networking, whereas cheaper Windows PCs may require more expensive solutions in this increasingly popular area. Also bundled for free is some of the best software available for any computer. In fact, Apple's iMovie, iTunes and iDVD applications are easy leaders of their fields – and not available for Windows PCs at all. And all new Macs have access to Apple's wonderful Mac-only iTools services (free Web-site hosting, iCards, and Internet digital storage). iTools in itself is a good enough reason to choose a Mac rather than a Windows PC.

On paper, the PowerPC G3 processor appears slower than the chips in these cheaper PCs, which sometimes boast nearly three times as many megahertz as the entry 500MHz G3. But this 'speed difference' is phoney, because the PCs' Intel Pentium/Celeron and AMD Athlon processors have to run at that gigahertz speed just to keep-up with the more efficient PowerPC chips. It's important to remember that megahertz speed does not equate to greater performance when comparing different types of processor.

For the iMac's £699, you get a fast, highly capable desktop computer with built-in 15-inch screen and a bunch of free software that will have you building Web pages not long after you mastered browsing the Net, and making home movies with Hollywood-style effects.

The limitations of these entry-level desktop and portable Macs can be overcome at a later date if you require more from your new computer. First, the 64MB of RAM is stingy in today's computing world. Luckily, RAM is extremely cheap right now – and it's easy to add. Doubling the iMac's amount to a more healthy 128MB would cost just £8. As much as 1GB of iMac RAM costs under £100! Memory for portable computers costs a little more, but it's still only about £12 for an extra 64MB in your iBook.

The other thing missing from the entry-level iMac and iBook is a CD burner; they both come with a CD-ROM drive, not a CD-RW. Again, it's relatively inexpensive to add an external CD writer. We'd recommend at least an 8-speed CD-RW that uses the speedy FireWire port. These can be picked up for about £150. So, theoretically, you can buy a £699 iMac and bring it up to the functionality of the next (£899, inc. VAT) model for about £850 all in.

As the prices of iMac and iBook models rises, so you get more RAM, faster processors, bigger hard drives, and a variety of optical drives. You may also decide that the more expensive professional Power Mac and PowerBook ranges answer more of your needs.

Function: Pro means flexibility

The choice of Consumer or Professional ranges is more likely to be determined by what you need your Mac to do, rather than on having a few extra quid to spare.

The Consumer iMac and iBook are neat solutions for the home and school. The Professional Power Mac and PowerBook offer more flexibility and performance. But don't turn your nose up at an iBook, just because you use a Mac for work. And don't rule-out the Power Mac, even though you're planning a Mac for home.

All Macs are pretty much as functional as another. You can perform Photoshop tasks on an iMac, just as you can on a Power Mac. And serious gamers will want a Power Mac rather than an iMac because of its superior graphics capabilities.

In Apple's eyes, consumers are those people who use Macs for browsing the Web, email, word processing and games. You could also add users of programs such as Microsoft Office, and even databases. Apple means by professionals those people who use their Mac for computer-intensive applications such as high-quality photographic image-editing, video-editing, music making, 3D modelling, etc.

An iMac can do practically anything a Power Mac can do, but you may find its 15-inch built-in screen isn't big enough for your needs. Flexibility is the name of the game when it comes to the pro systems. You can add several internal hard drives to a Power Mac, for instance. With an iMac, you can add only external hard drives. Again, there's not much of a difference when it comes to functionality, but a lot when it comes to flexibility and performance – your internal hard drive options include giant, super-fast SCSI, rather than nippy external FireWire choices.

The most obvious difference between the Consumer and Professional ranges is larger displays. While the iMac is restricted to its 15-inch screen, the Power Mac can run monster-sized external monitors – including the latest LCD flat panels. You can also fill any of the four PCI slots (or AGP slot) with incredibly powerful video-graphics cards to boost 3D display speeds. The iMacs ship with a perfectly decent video card (the 16MB ATI Rage 128 Pro), but the Power Mac's AGP and PCI slots offers you the chance to constantly upgrade to the latest cards when they appear.

While the iBook's 12.1-inch screen is great for most tasks and even for watching DVD movies, the PowerBook's mega-wide 15.2-inch screen is ideal for multi-palette applications – video-editing and music-making software, in particular.

The pro desktop Power Mac offers a lot more flexibility than the all-in-one iMac. However, other than the larger screen, the PowerBook's only functional difference to the iBook is its speedier performance.

Performance: G4 optimized

The big difference between the Consumer and Professional Macs in terms of performance is all about the processor. Consumer iMacs and iBooks run PowerPC G3 processors, pro Power Macs and PowerBooks run G4 processors.

The G4 is faster than the G3 – but not, on its own, by much. In Macworld Lab tests, a 400MHz G4 is about the same speed as a 500MHz G3.

The real performance breaker is when software applications have been optimized to take advantage of the G4's Velocity Engine. In technical terms, the Velocity Engine processes data in 128-bit chunks, instead of the smaller 32-bit or 64-bit chunks used in traditional processors – plus chip-maker Motorola has added 162 new instructions to speed-up computations. In real terms, this means that the Velocity Engine accelerates the data-intensive processing required by today's processor-intensive video and graphics applications.

Professional Mac programs, such as image-editor Adobe Photoshop or Apple's Final Cut Pro video-editor, are specially optimized to take advantage of the G4's Velocity Engine – and so run much faster than they would on a G3. If you use your Mac mostly for Web browsing, email, word processing, spreadsheets or games, then the advantages of the G4's Velocity Engine are minimal. That's why the G4's for professionals, and the G3 for consumers.

The PowerPC G4 is also designed to run in multiple-processor configurations. Multiprocessing – where a Mac packs more than one G4 chip – can also greatly accelerate those applications that are optimized to take advantage of it, such as Photoshop, Final Cut Pro, Alias Wavefront's Maya, and Newtek's LightWave. At present, there is just one multiprocessing Mac available, a Power Mac that is loaded with two 800MHz G4s.

As with the Velocity Engine advantages, multiprocessing is superior only for those programs that optimized to take advantage of the extra chip. In general (non-optimized) work, an 867MHz G4 is faster than two 800MHz chips. Apple's new operating system, Mac OS X, however, does take advantage of more than one processor – but, again, not enough that consumers will notice the difference.

The entry-level iMac's 500MHz G3 is well fast enough for Web browsing, email, word processing, etc – even Microsoft Office applications. Indeed, it wasn't so long ago that the top-end professional Mac – used by all graphic designers and 3D modellers – relied on a 300MHz G3. For many people, anything faster won't make much difference to a Mac's performance.

Designers, video editors and the like, should utilize the full power of the G4 – possibly even a multiprocessing Mac.

Form: Desktop or portable?

Many people chose their Mac on looks alone. Apple has created a range of computers that is strikingly different from the usual beige Windows PC crowd. But the big form-factor question is: desktop or portable?

Remember that there's virtually nothing your desktop Mac can do that a portable one can't – and vice versa. All Macs have USB and FireWire ports, as well as Ethernet and wireless AirPort capability. So, while you may always want your Mac to be at home, it needn't be a desktop model. You could lug an iMac around the house – but it would be a lot easier with an iBook. And that iBook can be hidden away in a drawer or under the bed when you need that desk space to do a jigsaw or play a board game, for instance.

Display Despite the iMac having a physically larger screen (15 inches compared to 12.1), both the iMac and iBook can display the same amount (1,024-x-768) of pixels while showing millions of colours. Each pixel represents a tiny picture

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8 Power Mac G4 733MHz

Price: £1,199, excluding VAT.
Pros: Good price, significantly cheaper than nest model up; G4 processor speeds up optimized applications; CD-RW; 128MB of RAM; iMovie 2; FireWire; Gigabit Ethernet; 40GB hard drive; capacity for extra hard drives; 4 PCI slots; powerful AGP4x video card; easy-to-access case design.
Cons: Lacks extra cache facilities and DVD-R SuperDrive of higher-end Power Macs.
Perfect for: Mac professionals on a budget who use applications optimized for the G4's Velocity Engine, and other high-end programs. Tower design easy to access and upgrade with extra internal components, such as larger, faster hard drives, PCI cards, etc. Unless you're a super-power user, the speed difference between this and more expensive models shouldn't concern you.
Star Rating: ★★★★/8.6

9 Power Mac G4 867MHz

Price: £1,799, excluding VAT.
Pros: Cheap, considering DVD-R SuperDrive; G4 chip speeds up optimized software; fastest Mac on general-task performance; built-in SuperDrive combines DVD-R and CD-RW; 128MB of RAM; extra 2MB of Level-3 backside cache; iMovie 2; FireWire; Gigabit Ethernet; 60GB hard drive; capacity for extra hard drives; 4 PCI slots; powerful AGP4x video card; easy-to-access case design.
Cons: Expensive if you don't require the DVD-R capabilities.
Perfect for: Mac pros who use software optimized for the G4's Velocity Engine, and other high-end programs. Tower design easy to access and upgrade with extra internal components, such as larger, faster hard drives, PCI cards, etc. Built-in SuperDrive and bundled iDVD software makes it simple to create discs to play in standard DVD players. If multiprocessing doesn't offer you many advantages, this is the Power Mac system to go for.
Star Rating: ★★★★/8.7

10 Power Mac G4 800MHz dual-processor

Price: £2,499, excluding VAT.
Pros: Good price considering DVD-R SuperDrive and two processors; G4 processor speeds-up optimized applications; built-in SuperDrive combines DVD-R and CD-RW; 256MB of RAM; extra 2MB of Level-3 backside cache; iMovie 2; FireWire; Gigabit Ethernet; 80GB hard drive; room for extra hard drives; 4 PCI slots; powerful AGP4x video card; easy-to-access case design.
Cons: Expensive if you don't need DVD-R capability; multiprocessing boosts performance on optimized applications only, and Mac OS X.
Perfect for: Mac pros who use applications optimized for the G4's Velocity Engine, and other high-end programs – especially if they take advantage of the dual processors, such as Adobe Photoshop and Alias|Wavefront's Maya. Its multiprocessing capabilities also make it the top Mac OS X system. Tower design easy to access and upgrade with extra internal components, such as larger, faster hard drives, PCI cards, etc. Built-in SuperDrive and iDVD software makes it easy to create discs playable in standard DVD players.
Star Rating: ★★★★/8.8



11 iBook 500MHz CD-ROM

Price: £1,099, including VAT.
Pros: Good price for beautifully designed portable; lightweight; compact; long battery life; processor fast enough for any application; 128MB of RAM; iMovie 2; FireWire; its 12.1-inch display is surprisingly large; free software.
Cons: Lacks CD-RW drive; 15GB disk tad tight for video – external FireWire drives will sort this.

Perfect for: People who want lightest possible mobile-computing solution, and need Mac for business applications (word processing, etc), email, Web browsing, printing, scanning, games, etc, but don't require a CD burner. Great computer for students, who can always add an external CD-RW later.
Star Rating: ★★★★/8.5

12 iBook 600MHz DVD-ROM

Price: £1,299, excluding VAT.
Pros: Good price for beautifully designed portable; lightweight; compact; long battery life; processor fast enough for any application; DVD-ROM drive; 128MB of RAM; iMovie 2; FireWire; its 12.1-inch display is surprisingly large; free software.
Cons: Lacks CD-RW drive; 15GB hard drive a little tight for digital video – but external FireWire drives will sort this.

Perfect for: People who want lightest possible mobile computing solution, and want to use Mac for business applications (word processing, spreadsheet, etc), email, Web browsing, printing, scanning, games, etc, but don't require a CD burner. Perfect machine for watching DVD movies while travelling. Great computer for students, who can always add an external CD-RW later.
Star Rating: ★★★★/8.6

13 iBook 600MHz CD-RW

Price: £1,429, including VAT.
Pros: Beautifully designed portable; lightweight; compact; long battery life; processor fast enough for any application; CD-RW drive; 128MB of RAM; iMovie 2; FireWire; its 12.1-inch display is large enough.
Cons: 15GB hard drive a little tight for digital video – but external FireWire drives will sort this. Why only £70 cheaper than top-end?

Perfect for: People who want lightest possible mobile computing solution, and want to use Mac for business applications (word processing, spreadsheet, etc), email, Web browsing, printing, scanning, games, etc, and require a CD burner but not a DVD-ROM drive. Great computer for students, but most would prefer the next.
Star Rating: ★★★★/8.7

14 iBook 600MHz CD-RW/DVD-ROM

Price: £1,499, excluding VAT.
Pros: Beautifully designed portable; lightweight; compact; long battery life; processor fast enough for any application; combination CD-RW and DVD-ROM drive; 128MB of RAM; iMovie 2; FireWire; its 12.1-inch display is surprisingly large for a laptop.
Cons: 20GB hard drive better than other iBooks' storage, but still tight for serious digital-video work – FireWire drives will sort this.

Perfect for: People who want lightest possible mobile computing solution, and want to use Mac for business applications (word processing, spreadsheet, etc), email, Web browsing, printing, scanning, games, etc, and require a CD burner. Perfect machine for watching DVD movies while travelling. This iBook has it all, and is just £70 more than CD-RW model. Great for students.
Star Rating: ★★★★★/9.0

element. The 1,024 pixels is the width of the display; the 768, the height. The picture on the iMac's monitor will appear larger (the icons and text will be bigger), but it can't show any more pixels than the iBook's screen. If you're short of sight, a desktop monitor's resolution will always be better for you.

You can attach a second monitor to an iMac or iBook, but that 1,024-x-768-pixel resolution remains, because it mirrors exactly what's on the built-in screen. Attach a 21-inch screen, for example, and its image will just be a larger view of what you see on the iBook.

The PowerBook, on the other hand, offers more flexibility. You can attach a larger external monitor to increase resolution from the built-in screen's 1,152-x-768 pixels to 1,920-x-1,440 pixels, showing millions of colours.

So, thinking about screen size, the choice between an iMac and an iBook comes down to your ability to read smaller text and see slightly smaller icons on an iBook when it comes to screen size.

Input Apple's Pro Keyboard is also bigger than that found on the iBook or PowerBook. The portables' built-in keyboard is full-size, but you may prefer the Pro Keyboard's chunkier keys and handy side keypads. The desktop Macs also come with Apple's cool optical Pro Mouse – easier to handle than the portables' trackpad. But if you can't get your digits round a trackpad, you can always buy a mouse and plug it into the USB slot.

Battery life The great thing about a portable computer is not just its compact size and light weight. It's the ability to use a laptop away from a power socket. While you can set-up your iMac or Power Mac to network wirelessly, you must still be attached by plug and cable to a wall. A laptop's battery frees you to work in the garden or on a train, for example. Apple claims that you'll get up to five hours battery life on a single charge on an iBook or PowerBook, and you can always carry spare batteries around with you. Using AirPort, you can network with other computers and use the Internet up to 150ft away from your phone socket.

Cost A big difference between desktop and portable computers is price. Although both sport 500MHz G3 processors and a CD-ROM drive, the entry-level iBook costs £400 more than the cheapest iMac. And the cheapest PowerBook is £400 more pricey than the entry-level Power Mac. Portables cost more to design, and components are dearer due to their size demands. You must weigh-up whether the extra is worth spending for the benefits that laptops offer.

The closest choice is between iMac and iBook. Other factors determining which you chose include how much you like the iMac's shape, and the ability to chose case colours – the iBook comes in white (Snow) only; the iMac in Indigo, Graphite and Snow (depending on model).

The choice between Power Mac and PowerBook is wider. While functionally nearly identical and pretty close on performance, the Power Mac's spare drive bays, multiprocessing capability, and AGP and PCI slots make it the most flexible Mac. It's also your only choice if you want to use Apple's iDVD software, which works only with the Power Mac's internal DVD-R SuperDrive.

If you want the fastest-possible processors, the speediest and largest hard drives, the most memory, and the very latest video cards, the Power Mac G4 is the machine. If you want G4 power and the ability to carry your computer around with you, the PowerBook is for you.

Looks: Award-winning design

The all-in-one iMac is ideal as a home computer, because its styling is chic and modern – compared to many of the huge plastic lumps available elsewhere. Because its screen is built-in, and the cables are tucked away to one side, it's less messy than a multi-component system, and can be moved around with ease. It's compact because there's no room for a second internal hard drive or PCI cards. But, as most people never need such things, that won't matter for many.

Apple makes it fairly easy to open up the iMac so that you can increase the size of the installed internal hard disk, and add extra RAM modules when you want.

The pro desktop Power Mac also looks stunning in its silver and see-through case. It's big because it has space inside for extra hard- and removable-disk drives, PCI cards, etc. These are added very easily, with the right-hand side-panel pulling open even when the machine is switched on.

The two portable Macs both look great. The iBook is slim, compact and dressed in cool white. The PowerBook is positively skinny, and clad in industrial-looking titanium shell. The iBook is slightly lighter than the PowerBook (by 0.2kg; 0.4lbs).

Features: Money talks

Once you've worked out your budget, considered function, worked out required performance, and decided on form factor, it's the features that will determine which specific model of iMac, iBook, Power Mac or PowerBook you buy. But, as with Mike Reid's *Runaround*, there are still a few chances to jump to another system.

iMacs Aside from the entry-level CD-ROM iMac, all the other iMac models feature a CD-RW drive. A CD burner is great for backing-up your stuff, storing digital photos, iMovies and, of course, iTunes audio collections. As we point out above, that's easily added at a later date if you want. If you really don't need a CD burner, then this is the desktop Mac for you.

However, most people will want a CD-RW, which means either adding an external FireWire drive (cost about £150) to the entry-level, CD-ROM-only model, or paying extra for a model with one built-in.

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16 PowerBook G4 550MHz 20GB

Price: £1,599, excluding VAT.
Pros: Great price; lightweight; super-slim; long battery life; fast G4 processor; 128MB of RAM; iMovie 2; FireWire; Gigabit Ethernet; widescreen 15.2-inch display; fast video card.
Cons: Lacks built-in CD-RW drive; 20GB hard drive a little tight for digital video – but external FireWire drives will sort this.
Perfect for: Macintosh professionals who want lightweight, stylish mobile computing solution, using applications optimized for the G4's Velocity Engine, and other high-end programs. Widescreen display perfect for multi-palette applications, such as those for video-editing, graphics and music.
Star Rating: ★★★★/8.8

17 PowerBook G4 667MHz 30GB

Price: £2,199, excluding VAT.
Pros: Lightweight; super-slim; long battery life; 256MB of RAM; fast G4 processor; 30GB hard drive; iMovie 2; FireWire; Gigabit Ethernet; widescreen 15.2-inch display; fast video card; AirPort Card included.
Cons: Lacks built-in CD-RW drive; performance boost of faster processor doesn't justify much higher cost – although larger hard drive and more RAM are certainly worthwhile inclusions.
Perfect for: Mac pros who want lightweight mobile computing solution, using applications optimized for the G4's Velocity Engine, and other high-end programs. Widescreen display perfect for multi-palette apps, such as video editing, graphics and music. The larger hard drive makes this better for video-editing than the entry-level PowerBook. Inclusion of AirPort Card is also a real bonus.
Star Rating: ★★★★/8.6



AirPort: market-leading wireless networking technology standard
All Macs are capable of utilizing AirPort wireless-networking. This is based on the worldwide industry standard IEEE 802.11 Direct Sequence Spread Spectrum (DSSS), more easily remembered by its WiFi nickname. With an AirPort Card (£67, ex. VAT) installed, and Base Station (pictured above; £203) to link to your Ethernet hub and/or modem line, you can network and use the Internet up to 150 feet away from your phone line. It's great for home and small-office networks, and perfect for portables. The top-end 667MHz PowerBook comes with an AirPort Card pre-installed, and ready for network action. See pages 24-25.

Special offers: free stuff and reductions

Apple is offering a bunch of special deals if you buy your Mac before the end of December 31, 2001. iMac buyers get the chance to add a 2.3-megapixel digital camera from Hewlett-Packard for just £1 (from the online Apple Store) or £15 p&p from authorized resellers. Power Mac purchasers who also buy an Apple flat-panel display get a refund of up to £300. And PowerBook buyers get twice the amount of RAM pre-installed – 256MB with the 550MHz model, and 512MB with the 667MHz PBG4.

Otherwise, the iMac models are differentiated by progressively faster processors, increased RAM and larger hard drives. The extra speed will probably be superfluous to most iMac users – compared to a 500MHz processor, a 700MHz chip won't speed up word processing, email, Web browsing, printing, etc, enough for you to notice.

The extra RAM is useful, but you could get a cheaper iMac and buy the extra RAM cheaper than Apple charges you for the next model up. However, it is worth getting the more expensive models for their larger hard drives if you're planning on making desktop movies via iMovie and a digital camcorder. If email, the Web and letter-writing is all you plan to use your iMac for, the entry-level's 20GB hard drive should suffice. For video-editing, buy the model with the largest hard drive.

If you love games and are really serious about 3D effects, consider the Power Mac – which has a more powerful video card, and allows you to add a larger monitor.

iBooks Aside from the entry-level 500MHz CD-ROM iBook, all other iMac models run at 600MHz. The difference between a 500MHz and a 600MHz G3 chip won't be noticeable to most iBooks users. The extra 100MHz won't speed up word processing, email, Web browsing, printing, etc, enough for you to notice.

However, the CD-ROM drive does mean you'll have to shell-out for an external CD-RW drive if you want to burn CDs. It's much more handy to have one built-in. A CD burner is great for backing-up your stuff, storing digital photos, iMovies and, of course, iTunes audio collections.

One of the iBooks boasts a DVD-ROM drive, rather than a CD-ROM or CD-RW. As there aren't too many DVD software titles out there right now, the principal use for the DVD will be watching movies in that format – great for long-haul air trips. The top-end model features a combo DVD-ROM/CD-RW drive – so you can watch DVD movies and burn CDs.

All the 600MHz iBooks are exactly the same apart from these different drives – except that the top-end model has a 20GB rather than 15GB hard drive. If you plan to make your own digital movies with the bundled iMovie application, buy the 20GB model or invest in a larger external FireWire hard drive – a 60GB drive costs about £250.

Power Macs Models get more expensive as processor speeds increase, and SuperDrives are added.

The entry-level Power Mac is a bit different to the higher-end models – particularly in terms of cache. Cache boosts processor efficiency and performance, because the processor can access data from the cache faster than it can from main memory.

All three Power Macs feature 256K of Level-2 on-chip cache per processor, running at full processor speed. In addition, the 867MHz system has 2MB of Level-3 backside cache, and the dual-800MHz Power Mac G4 has 2MB backside L3 cache per chip, for a total of 4MB. Backside cache lets the G4 better handle streaming media, as well as rip MP3s and encode video more efficiently.

While the 733MHz Power Mac has a CD-RW drive, the other two models include a SuperDrive – which can burn discs that will play in domestic DVD players, as well as burn CDs and read DVD-movie discs. If you have a DVD player at home, and fancy making your own DVDs of self-made movies or digital-still pictures, the SuperDrive is good value – especially as Apple's iDVD software is bundled for free.

The multiprocessing Power Mac boasts two 800MHz G4 chips. As mentioned above, this boosts performance on optimized software applications only – although it will increase speeds natively in Mac OS X. The dual-processor Power Mac also has a more powerful video card than the already very capable NVidia GeForce2 MX that ships with the single-chip Power Macs. Its GeForce2 MW features TwinView technology that lets you connect both an Apple display (using the Apple Display Connector) and a VGA display – without using an additional graphics card.

PowerBooks Apple's latest pro laptops feature speedy G4 chips. The difference between the entry-level 550MHz G4 and the 667MHz chip isn't massive, but the 667MHz models do boast a faster system bus – which speeds information around the PowerBooks' components. The combined faster bus speed (133MHz compared to 100MHz) and processor speed does widen the performance gap between these models.

Each PowerBook features a DVD-ROM drive, so you'll have to buy an external CD-RW drive if you want to burn discs. If CD burning is high on your priority list, consider the CD-RW or CD-RW/DVD Combo drive iBooks. The more expensive PowerBook features a larger hard drive – essential for many forms of media creation (video, music, etc). Another bonus with the 667MHz PowerBooks is the pre-installed AirPort Card that allows for WiFi wireless networking. It'll cost you an extra £67 to add one to the 550MHz model.

Time to choose

Once you've determined which features you require, and in which form factor, you should be close to making the right decision on which Mac is perfect for you. When you've chosen, take a few minutes to consider if it's worth spending that extra £100 or £200 on the next model up. Or maybe you'll see that, by saving some money buying the lower model, you'll have enough spare cash to tweak those parts that you feel need boosting with extra RAM or external hard drives, CD burners, etc. The number-one rule should be that if you think you might later require a feature (CD-RW or DVD-R, for instance), buy for that eventuality now, and you'll not need to upgrade again until quite a few years down the road. **MW**

What's in a Mac? Check-out Macworld's comprehensive Macintosh feature list

DESKTOP

Model	Price (ex. VAT)	PowerPC processor	Base RAM	Max RAM	Hard disk	CD DVD	System bus speed	Cache	USB ports	FireWire ports	PCI slots	Ethernet (BaseT)	AirPort	Graphics card	Max resolution; millions of colours (pixels)	Colours
iMac	£595	500MHz G3	64MB	1GB	20GB (5,400rpm)	CD-ROM	100MHz	256K L2	2	2	0	10/100	Ready	16MB ATI Rage 128 Ultra	1,024-x-768	Indigo
iMac	£765	500MHz G3	128MB	1GB	20GB (5,400rpm)	CD-RW	100MHz	256K L2	2	2	0	10/100	Ready	16MB ATI Rage 128 Ultra	1,024-x-768	Indigo, Snow
iMac	£935	600MHz G3	256MB	1GB	40GB (5,400rpm)	CD-RW	100MHz	256K L2	2	2	0	10/100	Ready	16MB ATI Rage 128 Ultra	1,024-x-768	Snow, Graphite
iMac	£1,105	700MHz G3	256MB	1GB	60GB (5,400rpm)	CD-RW	100MHz	256K L2	2	2	0	10/100	Ready	16MB ATI Rage 128 Ultra	1,024-x-768	Snow, Graphite
Power Mac G4	£1,199	733MHz G4	128MB	1.5GB	40GB (5,400rpm)	CD-RW	133MHz	256K L2	2	2	4	10/100/1000	Ready	32MB NVidia GeForce2 MX	1,920-x-1,200	Silver
Power Mac G4	£1,799	867MHz G4	128MB	1.5GB	60GB (7,200rpm)	CD-RW/DVD-R	133MHz	256K L2 + 2MB L3	2	2	4	10/100/1000	Ready	32MB NVidia GeForce2 MX	1,920-x-1,200	Silver
Power Mac G4	£2,499	2 x 800MHz G4	256MB	1.5GB	80GB (7,200rpm)	CD-RW/DVD-R	133MHz	2 x 256K L2 + 2 x 2MB L3	2	2	4	10/100/1000	Ready	64MB NVidia GeForce2 MX w/TwinView	1,920-x-1,200	Silver

PORTABLE

Model	Price (ex. VAT)	PowerPC processor	Base RAM	Max RAM	Hard disk	CD DVD	System bus speed	Cache	USB ports	FireWire ports	Ethernet (BaseT)	AirPort	Graphics card	Max resolution; millions of colours (pixels)	Weight (kg)	Dimensions Width-x-Depth x-Thickness (cm)	Colours
iBook	£935	500MHz G3	128MB	640MB	15GB (5,400rpm)	CD-ROM	66MHz	256K L2	2	1	10/100	Ready	8MB ATI Rage Mobility 128	1,024-x-768	2.2	28.5-x-23-x-3.4	White
iBook	£1,105	600MHz G3	128MB	640MB	15GB (5,400rpm)	DVD-ROM	100MHz	256K L2	2	1	10/100	Ready	8MB ATI Rage Mobility 128	1,024-x-768	2.2	28.5-x-23-x-3.4	White
iBook	£1,216	600MHz G3	128MB	640MB	15GB (5,400rpm)	CD-RW	100MHz	256K L2	2	1	10/100	Ready	8MB ATI Rage Mobility 128	1,024-x-768	2.2	28.5-x-23-x-3.4	White
iBook	£1,275	600MHz G3	128MB	640MB	20GB (5,400rpm)	CD-RW/DVD-ROM	100MHz	256K L2	2	1	10/100	Ready	8MB ATI Rage Mobility 128	1,024-x-768	2.2	28.5-x-23-x-3.4	White
PowerBook G4	£1,599	550MHz G4	256MB **	1GB	20GB (5,400rpm)	DVD-ROM	100MHz	256K L2	2	1	10/100/1000	Ready	16MB ATI Radeon Mobility	1,152-x-768	2.4	34.1-x-24.1-x-2.6	Titanium
PowerBook G4	£2,199	667MHz G4	512MB **	1GB	30GB (7,200rpm)	DVD-ROM	133MHz	256K L2	2	1	10/100/1000	Pre-installed	16MB ATI Radeon Mobility	1,152-x-768	2.4	34.1-x-24.1-x-2.6	Titanium

SOFTWARE INCLUDED WITH MACS; plus special offers

iMac Mac OS 9; Mac OS X; AppleWorks 6; iMovie 2; iTunes; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop; Cro-Mag Rally; Bugdom; Nanosaur + Special Bundle *** + free 2.3-megapixel digital camera ****
iMac Mac OS 9; Mac OS X; AppleWorks 6; iMovie 2; iTunes; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop; Cro-Mag Rally; Bugdom; Nanosaur + Special Bundle *** + free 2.3-megapixel digital camera ****
iMac Mac OS 9; Mac OS X; AppleWorks 6; iMovie 2; iTunes; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop; Cro-Mag Rally; Bugdom; Nanosaur + Special Bundle *** + free 2.3-megapixel digital camera ****
iMac Mac OS 9; Mac OS X; AppleWorks 6; iMovie 2; iTunes; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop; Cro-Mag Rally; Bugdom; Nanosaur + Special Bundle *** + free 2.3-megapixel digital camera ****
Power Mac G4 Mac OS 9; Mac OS X; iMovie 2; i Tunes; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop
Power Mac G4 Mac OS 9; Mac OS X; iMovie 2; iTunes; iDVD 2; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop
Power Mac G4 Mac OS 9; Mac OS X; iMovie 2; iTunes; iDVD 2; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop; Cro-Mag Rally; Bugdom; Nanosaur
iBook Mac OS 9; Mac OS X; AppleWorks 6; iMovie 2; iTunes; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop; Cro-Mag Rally; Bugdom; Nanosaur
iBook Mac OS 9; Mac OS X; AppleWorks 6; iMovie 2; iTunes; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop; Cro-Mag Rally; Bugdom; Nanosaur
iBook Mac OS 9; Mac OS X; AppleWorks 6; iMovie 2; iTunes; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop; Cro-Mag Rally; Bugdom; Nanosaur
PowerBook G4 Mac OS 9; Mac OS X; iMovie 2; iTunes; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop
PowerBook G4 Mac OS 9; Mac OS X; iMovie 2; iTunes; Microsoft Internet Explorer; Netscape Navigator; Outlook Express; FaxSTF; Palm Desktop

** Apple is offering price reductions if you also buy an Apple LCD display (15-inch and 17-inch, Studio Displays, and 22-inch Cinema Display). £60 refund on 733MHz model; £180 on 867MHz; and £300 on dual-800MHz. Offer valid until December 31, 2001.
** Apple Double Your RAM promotion for PowerBooks runs until December 31, 2001. After that date, RAM levels fall to 128MB and 256MB respectively.
*** A special free software bundle is available for all CD-RW iMacs (not entry-level CD-ROM iMac) purchased before December 31, 2001 – from participating consumer Apple Stores and Apple Authorised Resellers. Bundle includes: Tomb Raider - The Last Revelation; Escape from Monkey Island; Sim City 3000; Cro-Mag Rally; Bugdom; Nanosaur; Route 66 Europe 2000; Encyclopedia of Science; Ultralingua; Adiboo Environment; Star Wars Pit Droids; Talk Now; Top Calculette.
**** Free HP Photosmart 318 with single purchase of CD-RW iMac; offer runs till December 31, 2001.



Get your backup

A data-backup solution can save disaster from striking. By Adam Engst

You're almost done with an important project. That's when whatever can go wrong, does. The panic starts as your screen freezes, and you realize how much work's been lost – and how much more work you may have to do to get it back. Sound familiar? No matter how careful you are, sooner or later you're guaranteed to lose data. I once overwrote a client's entire database with a text file. If I'd backed that Mac up regularly, I could've enjoyed my weekend. Instead, I spent it recovering the database. Eventually it will happen to you: an inopportune crash corrupts a key file, your hard disk fails, your PowerBook is stolen, a fire sweeps through your office, or you just make a simple mistake. The details are immaterial. Your only defence is to back up early and often. Fortunately, regularly making copies of important files is neither as hard nor as expensive as you'd think. Here, you'll learn how to determine your backup needs, develop a strategy, choose a device and configure the top backup software for the Mac – Dantz Development's feature-packed Retrospect Desktop Backup and Retrospect Express Backup. Then when you fall foul of Murphy's Law, you'll be ready.

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1 Determine your needs

When the backup bug bites you – usually after you've lost some crucial data – you'll be tempted to run out, buy some hardware and software, and start copying files. Don't do it! Only a carefully considered backup strategy will guarantee your success when you need to recover important files. The first step is to find out just what kinds of data you've got.

If you're like most people, you don't know exactly what's on your hard drive. Browse through it today, and you're sure to find files you created last year, shareware utilities you downloaded but never used, piles of email, and hundreds of preferences files. Do you really need to back up all of that stuff? Maybe, maybe not – though you never really know how important some things are until they're gone. To figure out just what you want to protect, you should ask yourself these three questions:

How much data do I have? The raw data stored on your Mac comes into play when developing a backup strategy and choosing an appropriate backup device. If you have only one Mac, this question can be easily answered by clicking on your hard drive icon in the Finder, choosing Get Info, and looking at the Used line in the resulting window. If you have other Macs to back up, do the same for them and add those results to the total. Don't worry if it seems as though there's too much data to backup. Retrospect helps you out by storing only a single copy of all the duplicate files it finds. (How many copies of SimpleText do you have?) And make data changes only rarely – for example, with applications – so you'll seldom need to back up all of it. (You may not need to back up some applications at all if you're in possession of the installation CD-ROMs.)

How often does my data change? Now you know how much needs to be backed-up the first time, but you still need to find out how much of that data requires backing-up on a regular basis. The more your data changes, the more often files will need to be copied. For example, applications rarely change, but every email message you receive alters Microsoft Outlook Express' database. If mail is important to you, additional backups are critical.

Use Sherlock to find out how much data changes frequently: choose Modified Today from Sherlock's Custom pop-up menu, click on the magnifying-glass icon, and sort the resulting list by size (see "Find changed files"). Add up the sizes of files that are 1MB and larger to get a rough estimate of how much data changes in a day.

How vital is my data? If you use a Mac mostly for games and the Web, you can probably live without most of what's on your computer (except, of course, your accountancy data and Myst III: Exile game files). But if you're an accountant preparing tax returns for clients, data is crucial. The more valuable the data, the more imperative regular backups are; your files' importance is a key factor in developing a backup strategy.

Fill in the blanks Now use the "What's your backup strategy?" worksheet to gauge your priorities.

'In many ways, daily backups are the easiest. You can automate the procedure, and do it right'



Find changed files
Use a custom Sherlock search to figure out how much of your data changes each day.

2 Devise a plan

Once you know what to back up, it's time to figure how and when. If you despair at the thought of sitting next to your computer every Friday, swapping Zip disks for an hour, rest assured – there are plenty of alternatives. Before spending money on hardware, think about the following issues.

Ideal frequency An old backup may be better than nothing – but not by much if it doesn't contain the files you need. If less than 100MB of your data changes in a day, use a custom-search in Sherlock to see how much of it changed over a longer period of time. (Click on the Edit button, select Date Modified, and choose Is Within 1 Week Of, or Is Within 1 Month Of.)

There's little point in backing-up once a month unless data changes are minimal and you don't consider the information to be important. But even a monthly backup can prove worthwhile: it can be used it to make your Mac functional again if the hard drive becomes damaged. If all the files from your backup are restored after reformatting the hard drive, the Mac will return to the state it was in when those files were saved; you won't have to spend hours re-creating preferences and custom keyboard-shortcuts, or downloading your favourite, and possibly elusive, shareware programs.

You may need to back up your home Mac only once a week, if relatively little data changes (and the data isn't too crucial). If most of your time at this Mac is spent during weekends, say, backing up files every Sunday night might make sense.

If you use your Mac for work that would be difficult to re-create, then back files up every day. Ditto if you're responsible for multiple Macs (and you don't know what people are doing on each one).

In many ways, daily backups are the easiest option. You can automate the procedure fairly easily and do it at night when it won't interrupt anyone.

Multiple sets A backup set is a collection of media that contains backed-up files. A single set could include, for example, one CD-R disc or three tapes, depending on how much information there is.

A single backup set is like an old backup – its value is limited. If a serious problem occurs – a burglary, a fire, a power surge that takes out both your hard drive and your backup drive (with tape or CD-R inside) – not having another backup set could leave you in the lurch.

You should have several backup sets, though most of the time, two or three will be sufficient. (Be prepared for tapes snapping, CDs getting scratched, and hard drives breaking.) Store one set in a different location.

The problem with backing up to multiple sets is that you'll need to establish a regular schedule for swapping them. Otherwise, you could end up with a secondary set so out of date that its contents aren't useful.

If you run a corporate or home office with many computers, two or three backup sets may not be enough. Some businesses have a different backup set for each day of the week, to spread out the risk of media failure. But keep in mind that the more backup sets you have, the more work juggling the media is.

A permanent record If you're backing-up to several different sets, it's easy to store permanent snapshots of your data for use months or even years later. Just designate one set as a permanent archive; after its full, store it instead of erasing it. Then, for instance, if a client wants to reuse materials from an old project, you can find the necessary files in your permanent archive.

If you're frugal, you won't want to buy more media than you need. But the truth is, the more often you use your backup media, the likelier it is to fail. It may seem thrifty to back your Mac up to the same tape every night, but when that tape breaks, you'll wish you'd spent the extra money.

Store sets safely Keep backup sets safe in a place without temperature or moisture extremes (not in your car's glove compartment), and away from the magnetic fields generated by motors, power cables, audio speakers, and telephones.

Consider storing your backups in a physically secure place, such as a locked cabinet or closet. For added security, choose a fireproof media safe. Make sure the safe is rated for protecting magnetic media, which melt at temperatures that won't ignite paper (many fireproof safes promise to protect only paper).

Most important, store at least one backup sets elsewhere, whether it's with a neighbour, in a safety deposit box, or with an Internet backup service. This will protect you if your computer isn't the only thing damaged. For example, after the 1993 World Trade Center bombing, many businesses weren't allowed back into the building for weeks, not even to retrieve backups. Companies with off-site backups were able to buy or lease new computers, restore data from their off-site backup sets, and keep working in temporary offices. Some businesses that didn't have off-site backups went bankrupt.

Make a plan Take a moment and jot down your thoughts about what you've just read. How often do you want to backup, how many backup sets will you keep, how are you going to handle archiving, and where will you store backups? There are no universal answers here, but your specific needs will refine your backup-device choices. (See "The best backup device" to figure out which is most appropriate for your situation.)

3 Set up the software

Once you have your strategy, device, and media in hand, it's time to set up Dantz Development's Retrospect Desktop (£149; Computers Unlimited, 020 8358 5857) or Retrospect Express (£39) The main difference between the two is that Retrospect Express can't back up multiple Macs over a network and lacks some customization options. However, both Desktop and Express offer powerful scripting capabilities that handle everything related to your backups. Retrospect Express is also available as a 20-client version for £299. (All the above prices exclude VAT). A Mac OS X-compatible version of Retrospect has been in the pipeline since late 1999, but the company has hit problems, and has got no further than posting a client public beta version on its Web site (**www.dantz.com**). The beta cannot be relied upon for safe data backup. Dantz expects version 5.0 to ship "mid to late Q1 2002".

EasyScript The best way to start most basic backups is with Retrospect's EasyScript feature (under the Automate tab), which helps you create a backup script. If necessary, you can modify it later (see "Easy custom scripts"). The script tracks the Macs you wish to back up, the backup sets that store your data, the backup schedule, and any other options you choose. (See "A walk through EasyScript" for a tour of the setup process.)

To use EasyScript, specify the source, the backup device, and how often to run the backup. If you've completed the worksheet and thought about your strategy, answering EasyScript's questions will be easy.

Next, EasyScript asks how often you want to rotate backup sets. The more frequently they are swapped, the lower the chance of media failure. However, too-frequent rotations can make backing up a painful process – and that's more dangerous than a longer rotation schedule. In most cases, weekly rotation is best. Switch from one backup set to another every Friday, for instance, and then take the last-used backup set off-site.

After the information has been entered, EasyScript summarizes its proposed strategy and lets you choose a time of day to run backups. If you've decided to use relatively small-capacity media such as CD-Rs, choose a time when you'll be present to insert new discs. If backing-up to large tapes that won't require any swapping, it may make more sense to choose a late-evening time.

When you click on Create, EasyScript generates the Retrospect script and asks you to name the two backup sets it creates by default. The names go on the catalogue files saved to the hard drive; these contain each backup set's directory. More important, Retrospect gives these names – along with sequential numbers – to each tape, CD, or disk in the backup set. When Retrospect asks you to insert a specific tape, say, during a backup or restore, the program will ask for it by name. You should give backup sets unusual names – it's much easier to confuse boring names than names like Fred and Ginger, for example.

At this point, you're ready to back up. Choose EasyScript Backup from Retrospect's Run menu, and prepare to feed media into the drive.

Customize your script If during setup you don't see the required options – for instance, you might prefer a different destination, selected files, or schedule (including media-rotation schedules) – you can customize the script accordingly. Click on the Scripts button in the Automate tab and double-click on EasyScript Backup in the list.

By default, EasyScript creates two backup sets only. I recommend creating another, by clicking on the Destinations button, and using this third set as a permanent archive. To do so, choose to perform a New Media backup every so often; reuse your media with Recycle backups on the other two sets. Having at least three backup sets also is helpful if you store one off-site.

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'An OS X version of Retrospect has been in the pipeline since late 1999, but Dantz has hit problems and has got no further than a beta version'

What's your backup strategy?

Realistically, there are three basic approaches to backing up your data. You can copy only your most important files, everything you create or change, or just about everything on your hard drive. What's the best strategy for you? To find out, answer these questions and tally your points.

Question	Score
How much total data do you want to back up?	❑ Less than 500MB = 1 point ❑ 500MB to 10GB = 3 points ❑ More than 10GB = 5 points
How much of your data changes every day?	❑ Less than 100MB per day = 1 point ❑ 100MB to 1GB per day = 3 points ❑ More than 1GB per day = 5 points
How important to you is your data?	❑ Don't care about most of it = 1 point ❑ Have a fair amount of important work = 3 points ❑ Can't imagine redoing work = 5 points

3 to 5 points You should backup only your essential files – they're the most trouble to recreate, and you probably don't have many. Your task is to identify what qualifies as important, and to make sure you backup those files every time they change. This strategy is most appropriate for people with just a few easily identifiable files to back up, perhaps a Quicken file or a folder containing a Ph.D. thesis. Unfortunately, you'll have a lot of work to do if the entire hard disk goes south. You'll have to reload and reconfigure everything else.

7 to 9 points You don't need to backup absolutely everything, but you should back up all the files you create. Once you get beyond a certain amount of data, or data starts to change too frequently, identifying the most important files becomes difficult. Concentrate on your Documents folder; carefully identify important files stored in unexpected locations, such as macros in your Preferences folder. People who use only a few applications and store documents in specific locations can make good use of this approach. If you suffer a major crash, you'll have to reload and reconfigure your applications, but you won't lose anything you created.

11 to 15 points You should back up everything. This requires the largest-capacity media, but it's actually the easiest approach, since you don't have to think about what to backup. In the event of a corrupted hard disk, you can be up and running quickly – just as soon as all data is restored. This is the best strategy if you can't abide downtime, and it's certainly the safest method if backing up other people's Macs.

The best backup device

What should you use to store your precious data? You have many choices, including CD-RWs, tape drives, and external hard drives. Keep these five factors in mind: drive cost, media cost, media size, reliability, and speed. (See "Total cost of 100GB backup" for a breakdown of expenses.)

Small removables As a successor to floppy disks, 100MB Zip disks and 120MB SuperDisks work fine. However, the disks can't store very much, and when you factor that in, they cost a lot. Zip disks also aren't very reliable.

IDEAL USER: Person without much important data.

Large removables You can store a lot more data on the larger disks used by the 2GB Jaz and Orb drives. However, the disks for these drives cost a lot and are often unreliable. Use them to backup relatively small amounts of data, or the cartridge costs could bankrupt you.

IDEAL USER: Person who has a relatively small amount of data and who already owns one of these drives.

CD-R/CD-RW Recordable CDs have a lot going for them. For one, they're quite reliable. CD-RW drives are increasingly inexpensive and commonplace. As of this writing, you can order almost all shipping Macs with CD-R drives. Blank CD-Rs cost less than 50p each in bulk (usually 100-plus) and they store more than six times as much data as Zip disks. Please note that Dantz says you can restore data from a CD-R drive only, not from just any CD-ROM drive.

IDEAL USER: Person who has relatively little data and who can spend time swapping discs.

DVD-RAM Though nowhere near as common as recordable CD drives, DVD-RAM drives offer 4.7GB of storage per disc. But the long-term reliability of DVD discs is unknown, and costs are fairly high. I wouldn't buy a DVD-RAM drive just for backups, but if you already have one, it could be useful for small to medium amounts of data.

IDEAL USER: Person who already owns a DVD-RAM drive.

FireWire Hard Drives Until recently, FireWire hard drives were too small, too expensive and too difficult to connect for regular backups. But today's huge and fast FireWire hard drives are cheap enough to merit serious consideration if you have an average amount of data.

Hard drives are the fastest backup device you'll find, bar none, but they work clumsily with current versions of Retrospect. You must use Macintosh File backup sets when backing up to hard drives, and Retrospect currently limits this type of backup set to about 75,000 files.

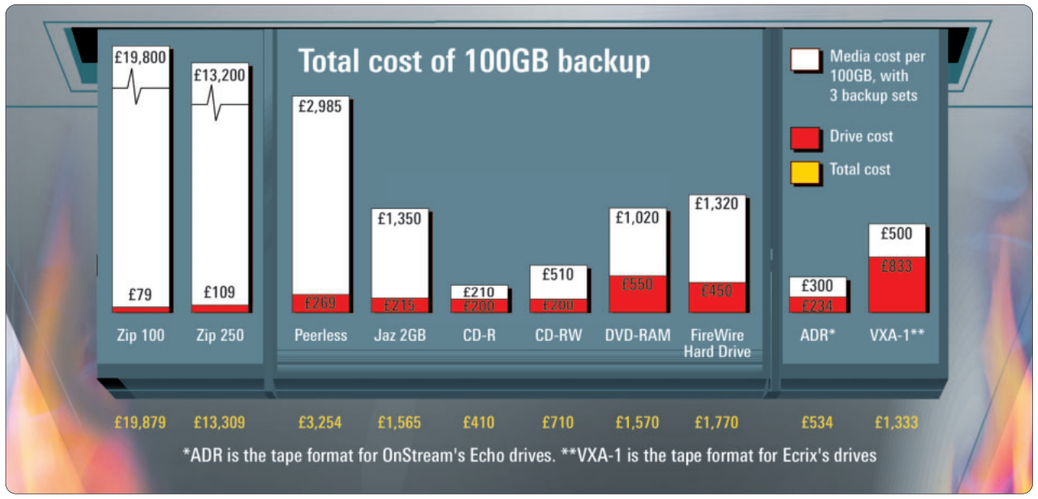
IDEAL USER: Person with one or two Macs willing to put in extra effort to configure Retrospect.

Tape drives If you have several Macs filled with data that require frequent backups, a tape drive may be the answer for you. They're ideal if you run a network of up to about 20 computers, because of their low media costs per gigabyte, large media size (to minimize tape swapping), and good reliability.

Each of the numerous tape formats has its own type of drive and media. The ADR format is for OnStream tape drives. The OnStream 30GB USB ADR Drive costs £234 (ex VAT), and is available from MacWarehouse (08705 168 672). You may also want to check out the Ecrix VXA-1 format, which supports 33GB tapes and performance up to 180MB per minute. The Ecrix 33GB FireWire External Drive costs £833 (ex VAT), from CMS Peripherals (020 8960 6000). The drive also has a compressed-data capacity of 66GB.

IDEAL USER: Person with a lot of data, or small networked workgroups.

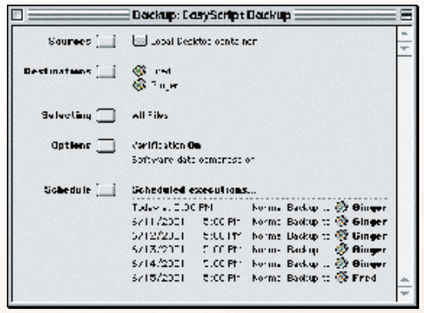
Making the choice Overall, I would recommend CD-R for individuals and tape drives for those working with several computers.



Your default EasyScript script backs up all of your files. However, if you want to backup only your Documents folder, this is absolutely no problem for EasyScript. Simply click on the Selecting button and choose Documents (or whatever data file is appropriate) from the pop-up menu.

You may wish to create a second backup script that backs-up all files but runs only once every few months. You can do this either with EasyScript or by duplicating and modifying the script you created (look in the Scripts window's Scripts menu). Then if disaster strikes, you'll be able to restore applications, system files, and preferences from the older, complete backup and restore recent work from your Documents backup.

Also, consider making a script that backs-up the most important files to an Internet FTP site. It takes a while to transfer files this way, but it's a great means of ensuring you have an additional off-site backup of your absolutely essential data.



Easy custom scripts

You can modify EasyScript's backup script to make it better fit your needs. To see what can be changed, click on each of the buttons shown here.

Look into the future In the Automate tab, Retrospect provides two tools to help you confirm its intentions: the Check and Preview options. Check looks at a script to make sure it's valid and tells you when the script is scheduled to run next, and Preview shows the list of all scripts that Retrospect plans to run. Both are highly useful for troubleshooting.

4 Do your part

Congratulations! You've determined your backup needs, developed a strategy, and set up Retrospect Desktop or Retrospect Express to copy critical files regularly. The one thing left to consider is the role you play.

It's up to you to swap media, clean tape drives, verify that you can restore data from backup sets, and generally keep an eye on the entire process. These aren't onerous tasks – especially if you've configured Retrospect well – but they are essential.

Swap media No matter what device you use, you'll have to swap media at some point. The more sets you use and the more frequently you backup, the more you'll have to swap. Build a few minutes for media swapping into your routine, preferably at the same time each day or week so you won't forget. Figure out who'll take over when you're sick or on holiday.

Bundled with Retrospect is software called PageNow – as well as a special AppleScript – allowing you to configure your Mac to page you when it needs new media to continue a backup.

Test your backups Many people don't learn until the worst possible moment that they've set up their backup system incorrectly, or that their tape drive isn't working. The only way to verify that backups are working is to restore files from them regularly – and the more important your data, the more often you should verify backups. Consider scheduling tests at the same time every couple of months so that you don't forget. Also, attempt to restore a few files every so often – again, according to a diary, so it becomes a matter of routine.

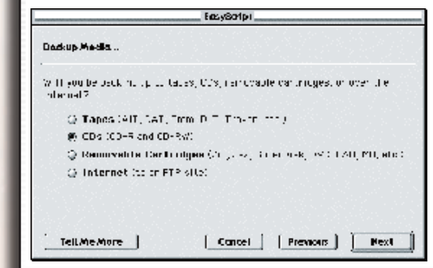
The last word

Creating and maintaining a backup strategy may seem daunting, and that's probably the main reason why so many people fail to do it. However, you can devise a backup strategy that is as complicated or as simple as you require it to be.

Once you come up with a plan, it'll take only a few minutes each day to ensure that you can quickly and easily recover from both minor mistakes and major catastrophes. Surely this has to be better than sitting with head in hands muttering "if only". **MW**

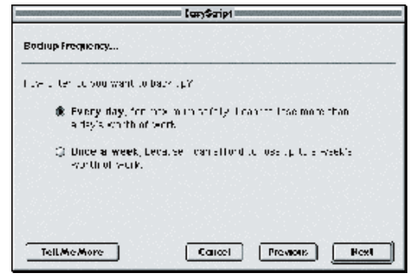
A walk through EasyScript

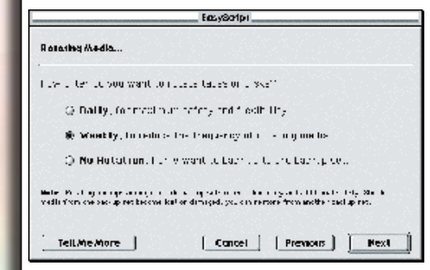
Putting your backup plan into action doesn't have to be difficult. Retrospect's EasyScript feature can do most of the work for you. Look under Retrospect's Automate tab for EasyScript, and then follow the steps outlined below.



Step 1: Select your media Select the media you plan to use. Retrospect offers many choices, but EasyScript doesn't let you choose an external hard drive; to do so, you'll have to modify the script.

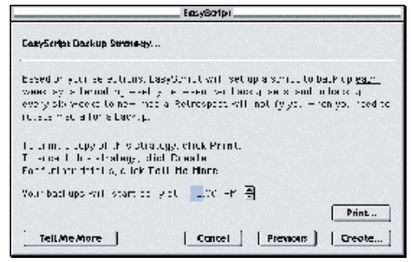
Step 2: Decide how often Choose whether you want to back up once a day or once a week. For other frequencies, you'll have to modify the backup script's schedule. (See "Easy custom scripts", left.)





Step 3: Rotate your media Choose whether you want to rotate backup sets on a daily or weekly basis. Though backing up to a single set may seem like a good way to save money on media costs, I don't recommend it.

Step 4: Review the summary Review EasyScript's proposed strategy, and select a time of day for backups to start. Click on Create, and Retrospect generates the script. Now you're ready to begin a more secure relationship with your data!



Rolling, rolling, rolling

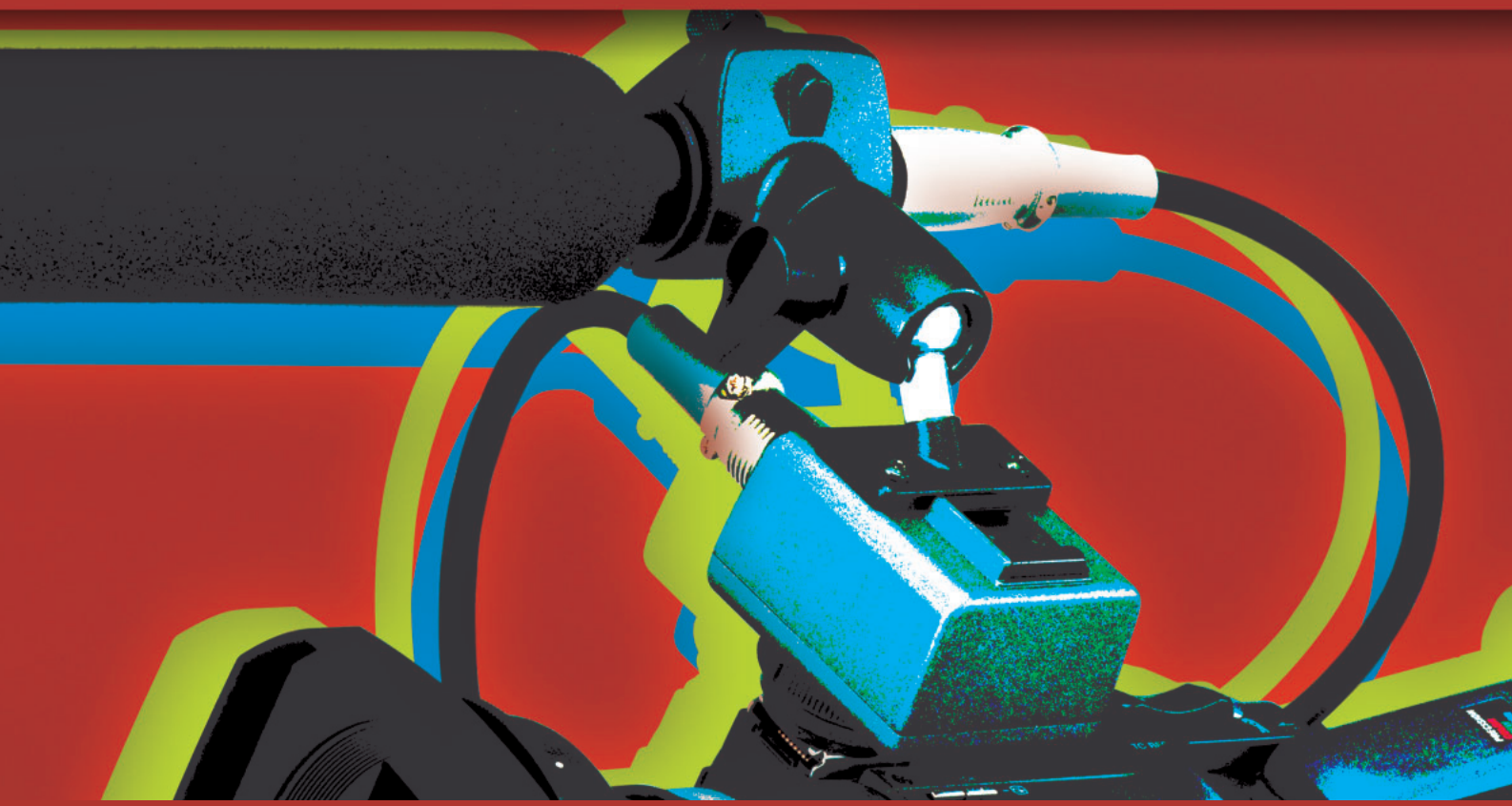
Consumer and professional digital camcorders tested and rated

By David Fanning

Digital video is changing the world. This may sound a grand statement, but it's one that Apple – with its vision of the Mac as a digital hub – has embraced wholeheartedly. At the heart of this hub are Apple's bundled multimedia-authoring software, iMovie 2 and iDVD 2.

Broadcast-quality cameras have been brought to the masses, and even mainstream TV shows – such as documentaries, movie shorts, makeover shows, and fly-on-the-wall docudramas – are all shot on digital-video cameras that are largely available from high-street electronics stores. In the past, hugely expensive broadcast-quality video cameras were the sole domain of television companies. Now, with a Mac and a pro camera costing as little as £5,000, amateurs can make entire shows on tiny budgets – ideal for the plethora of TV channels sprouting up everywhere.

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Ben Long's tips and tricks

Though it's easy to obsess over your video camera's specs, shooting good video often has much more to do with good technique than it does with make of lens or size of CCD (Charge-coupled Device). Sure, better lenses and imaging sensors will produce technically superior images, but you'll still be able to shoot video that's poorly lit and clumsily shot. Here are some quick tips that will help you capture footage that'll keep your audience interested and engaged, rather than bored and seasick.

• **Use a tripod** Few things will contribute as much to the quality of your video as will an inexpensive, lightweight tripod. These days, with cameras so small and light, there's no reason not to pack a tripod before your next outing. Even a cheap tripod – though it may not make for the smoothest pans – will make for video that is much more stable.

• **Go easy on the zoom** Ever sat through nausea-inducing home videos in which the image constantly zooms in and out on all sorts of different subjects. This almost always looks bad. Even when a zoom is used more skillfully, it runs the risk of looking like an over-dramatic, soap-opera shot. If you need to re-frame a shot, then pause the tape, zoom, steady the camera, and then roll.

• **Use as much of your frame for the subject as possible** It's easy to pay attention to the subject, and not realize how poorly-framed the shot is. When shooting, get in the habit of looking at the edges of the shot. This will force you to pay attention to the wasted space you might be shooting. (Image 1)





• **Watch that headroom** Look at the two pictures above (images 2 and 3). Image 2 is much more interesting than 3.

• **Watch for focal length** When shooting people, be aware that a longer focal length (that is, zooming in) is typically more flattering than a wider focal length (that is, zooming out).

If you have the space, position the camera farther from your subject and zoom in. Be aware that this may tax the range of the on-board microphone, so consider using an external mic.

Keep an eye on focal length, because zooming-in tends to compress the depth of the scene.

If you want to capture a particular sense of space, pay attention to the amount of magnification difference between the foreground and background, and position your camera and zoom accordingly.

• **Keep passing the open windows** Don't shoot into a bright backlight! If your subject is standing in front of a window, ask them to move.

• **Don't show off** Bette Davis claimed that Joseph Mankiewicz (director of *All About Eve*) was a genius because he understood that "the camera should follow the actor". Your job is not to impress the audience with clever camera-work and framing, but to convey the reality of the subject. If you've done your job well, the audience should never notice your camerawork.



• **Lead your subject** If your subject is looking in an off-frame direction, then "lead" them with some empty space in the direction they're looking. This makes more visual sense to the viewer (Image 4).





Ben Long is a Macworld contributing editor and is co-author of The Digital Filmmakers Handbook, *(Charles River Media)*

Here, we'll examine a selection of what's on offer in both the professional and consumer digital-video camcorder market. Your choice of either an entry-level or high-end model will be determined by what you wish to use the camera for. With a pro camera, you'll be able to make a TV show. The consumer models, meanwhile, are great for weddings, birthdays and holidays. But even at the consumer end, you'll be amazed what can be achieved with a few shooting tips, an iBook and iMovie 2.

There is a bewildering array of digital camcorders available from high-street electronics stores. They come in all shapes and sizes – and prices. However, there are a number of key factors that you, as a Macintosh user, should bear in mind.

Format

Not all cameras use the same tape format, though most seem to be settling on MiniDV as the format of choice. In pre-digital days, video cameras used VHS tapes – which made for pretty bulky cameras. Although there are now various types of smaller VHS camcorders, these are analogue and not ideal for using with a Mac. There was a minor revolution when HI8 was introduced, because its 8mm tape offered better quality than any of the VHS standards. However, Hi-8 is also analogue. And, although HI8 has been upgraded to Digital 8 (which, as the name suggests, makes it a digital format), this is more of a reaction to the success of MiniDV than any real innovation. Digital 8 cameras may be cheaper than their MiniDV counterparts, but they're also bulkier.

The palm-sized cameras available today invariably use MiniDV tapes. These tapes are similar in size to DAT (Digital Audio Tape) tapes, measuring just 65-x-48-x-12mm (about the size of a box of TicTacs).

To cram moving images onto MiniDV's 4mm tape

continues page 96

Product scores

Bar-chart quality scores run from 0-10, and reflect specific aspects of performance. Star Rating is an overall score, encapsulating these individual scores, plus any other factors relevant to your choice of purchase.

design



JVC GR DV2000E

The GR DV2000E hoodwinked me into expecting more – due to an over-large plastic lens-hood that hides a disappointingly small lens. The other consumer models on test are packed with gadgets and widgets to tempt the techies, but the JVC is relatively bare of such goodies. However, it does have one feature that stands out, and that's its still-camera function. This uses a 1.92-megapixel CCD for stills, and it saves images to an SD MultiMedia card. This is a higher resolution than is offered by any of its competitors, and adds real value to the package.

Also, the zoom control sits on the top of the camera, which works well, and there are handy adjacent buttons for snapshot mode and for focus. The JVC is a competent camera. If you can live without dozens of special effects, this model allows you to enjoy video camcording without paying for features that you may never use.

buying advice

specs

CCD	0.25 inches
Weight	660 grams
Image stabilization	Digital
Viewfinder/eyepiece	3.5 inches/0.44 inches
Minimum lux	18
Infrared night-vision	No
Contact	JVC, 0870 330 5000 (www.jvc.co.uk)
Estimated street price	£ 1,500

score

Features	8
Value	7
Quality	8
Star Rating	★★★★/7.7



Sharp Digital Viewcam VL-ME100 Pro

The VL-ME100 Pro is similar in size and shape to the Sony TRV-30E. Amazingly, Sharp has crammed even more consumer-targeted wizardry in this model. Not only does it have an infrared night-sight – that allows for shooting in pitch darkness – but it also has a removable viewfinder. This has a cable that allows the user to see what's in the shot without having to fuss around the camera. At a wedding, for example, this would allow you to capture remote-control footage from a tripod while seated, instead of having to stand behind the camera in the aisle. The remote can activate the recorder, zoom, and also take still shots. The still-camera functions record onto an SD MultiMedia card.

The model comes with a directional mike that's mounted on top of the camera – a nice touch. Like the Sony model, the VL-ME100 Pro is stuffed with cool gadgets, but also performs well in the most important areas, such as sound and image quality.

CCD	0.20 inches
Weight	705 grams
Image stabilization	Digital
Viewfinder/eyepiece	3.5-inch (detachable)
Minimum lux	3
Infrared night-vision	Yes
Contact	0800 262 958 (www.sharp.co.uk)
Estimated street price	£ 1,300

Features	9
Value	9
Quality	8
Star Rating	★★★★/8.6

design



Sony CDR TRV-30

Sony knows how to make both quality cameras and compelling gadgets, and this model demonstrates its knack for both, offering excellent video features, plus loads of nifty extras.

Foremost among these features is its Super Nightshot mode, which uses an infrared light to illuminate dark scenes. When I say dark I'm not talking overcast – I mean pitch black. It's ideal for those foxes in the back garden. Although the results are monochrome green, they're still impressive.

There's hardly a Sony product out there that doesn't have a MemoryStick hidden somewhere, and this one's no exception. The MemoryStick gives you the welcome ability to take still images, though these won't be as high quality as with a dedicated digital-stills camera. There are also a host of digital effects and the package is very entertaining. It misses out on a better score because it uses digital rather than optical image-stabilization.

buying advice

specs

CCD	2.5 inches
Weight	680 grams
Image stabilization	Digital
Viewfinder/eyepiece	3.5 inches
Minimum lux	7
Infrared night-vision	Yes
Contact	08705 111 999 (www.sony.co.uk)
Estimated street price	£1,500

score

Features	9
Value	8
Quality	8
Star Rating	★★★★/8.3



Canon MVX1i

The MVX1i doesn't offer the fun features of the Sony CDR TRV-30E consumer model; it's more straight-laced than that. It does, though, boast a number of excellent features, not least of which is its excellent optical image-stabilization, a feature more usually associated with pro models. This means that even when zoomed to the maximum, camera-shake is minimized. A number of other cameras use a digital correction for this, but that is an inferior solution. The LCD viewfinder is a little smaller than with other consumer models. However, this does make it more compact. The controls are easily thumb-operated, and the zoom and still-photo button are on the side. The MVX1i does offer some fun effects, and there's also a still-camera mode that uses an SD Multimedia card. This Canon is geared to getting the basics – like image quality – right, rather than being laden with frivolous features.

buying advice

specs

CCD	2.8 inches
Weight	660 grams
Image stabilization	Optical
Viewfinder/eyepiece	2.5-inch/0.55-inch eyepiece
Minimum lux	3
Infrared night-vision	No
Contact	0800 616 417 (www.canon.co.uk)
Estimated street price	£ 1,300

score

Features	8
Value	9
Quality	9
Star Rating	★★★★/8.7

means that data needs to be compressed. Even though you needn't worry about this (it happens automatically, thanks to special internal hardware in the camera) it may be of interest to you to know what's going on.

Analogue video uses signals that are recorded as fluctuating values, while digital video translates the values into numbers before recording them. This creates a lot of information, which is why it needs to be compressed.

Digital footage is compressed using something similar to JPEG compression, though it's more sophisticated than this. This reduces the data at a ratio of 5:1, meaning a 5MB clip is reduced to 1MB – in real time as you record. This offers far-better quality than previous heavier compression levels found in digital camcorders.

There are formats that don't use compression at all. Cameras that use D1, an uncompressed composite format, sell for tens of thousands of pounds. It's the highest-quality video that's available – the kind of camera used for top-end broadcast television. Programmes such as sitcoms, sporting events, and TV movies use this format.

In this feature, it's only the pro Sony model, the DRS PD150P, that uses a proprietorial format – DV Cam. All the others use MiniDV – a format that spans both the consumer and lower-end broadcast-quality models.

How high do you fly?

Software Broadly speaking, iMovie 2 home-users splashing out more than £2,000 on a digital camcorder are probably over-spending.

Final Cut Pro or Adobe Premiere users working in a commercial environment, on the other hand, may wish to consider the more-expensive pro models. However, there are no hard and fast rules here. Some people will happily edit commercial footage on iMovie 2, because they don't require special effects or fancy transitions. Scenes are cut together without frills, something iMovie can handle easily.

Others will use Final Cut Pro to produce ultra-slick home movies. Final Cut Pro may be a high-end editing package, yet it can't make a Speilberg out of a Michael Winner. The quality difference between consumer and professional camcorders will always be noticeable.

Sound If software doesn't define what's low and high-end, then certain camera specifications do. One of the key differences concerns sound quality. Low-end cameras tend to come with low-power built-in microphones, while pro models often boast high-quality stand-alone microphones.

If you were to watch two pieces of footage – shot with a consumer and pro camera – the sound is likely to be the first noticeable difference.

Image quality Footage shot on a consumer model will appear shakier, because they rely mostly on optical image-stabilization, as opposed to the superior digital-stabilization technology of the pro models. And footage appears harsher in the consumer models, because they lack the fancy image-processing features of the pro models,

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Lux interior

One measure of a digital camcorder's quality that's useful to bear in mind is its lux rating. Lux is a unit of measurement that represents the minimum amount of light required for the camera to be able to render an image. The lower the rating, the better the camera will perform in poor light. Those cameras on test that use night-vision features will work in zero lux – or pitch darkness.

Night-vision technology uses infrared light to illuminate the scene, and will capture footage in monochrome. This may be handy for filming foxes or badgers, but isn't something you'll use every day, and tends to feature mainly in consumer models.

■ **For more movie-making tips, see *Macworld*'s Missing Manual features from April to June 2001.**

Professional digital camcorders editors' choice

design





buying advice

Canon XLS1

This is one of the most recognizable pro cameras, with its huge lens constituting almost half the bulk of the camera. The XLS1 both plays and looks the part – something the smaller Sony DSR-PD150P cannot claim so readily: at a wedding, the Sony could be mistaken by guests for a consumer model. The Canon's image quality is driven less by format (its uses MiniDV), and more by the high quality of its lens, its image-stabilization features and its audio performance. Also, its controls and connectivity are aimed at professional videographers.

The XLS1 is lighter than the larger broadcast-quality cameras but, compared to consumer models, it's weighty. Even the shoulder pad it comes with does little to help, making lengthy tripod-free shooting an exercise in endurance.

Its price of around £2,500 makes it an ideal step-up from the consumer models, and its sheer bulk will impress your peers. However, the Sony PD150P costs only a little more, and, although it lacks the heavy-hitting looks of the Canon, it more than makes up for this in the more-professional features it offers.

Sony DSR-PD150P

The PD150P is smaller than you'd expect for a professional digital camcorder. This may be good for undercover documentary work, but not so handy if you want to impress the heck out of a wedding party. It uses a variation of MiniDV called DV Cam, Sony's own high-end version of the format. The difference isn't in the quality of the recording – it uses the same compression methods as other cameras – but is in the special cassettes it uses. These contain a microchip that can hold timecode data. DV Cam can also record at a higher speed, meaning the tape holds more data than ordinary MiniDV.

The lens offers 12x zoom, plus a digital zoom. It also has high-quality image stabilization, still-image capture, and, of course, the ubiquitous Sony Memory Stick.

The PD150P offers more professional features than the Canon, and, although recorded material may not be of a higher quality, it will be more robust because of the way it is recorded: there's less chance of image drop-out and other tape-related problems.

specs

CCD	3x 0.33 inches
Weight	1,700 grams (2,860g fully equipped)
Image stabilization	Optical
Viewfinder/eyepiece	0.7-inch TFT eyepiece
Minimum lux	2
Contact	Canon, 0800 616 417 (www.canon.co.uk)
Estimated street price	£ 2,500

CCD	3x 0.33 inches
Weight	1,800 grams
Image stabilization	Optical
Viewfinder/eyepiece	2.5 inches/1-5 inches
Minimum lux	2
Contact	Sony, 01932 816 380 (www.sony.net/uk)
Estimated street price	£ 2,900

score

Features	10
Value	8
Quality	10
Star Rating	★★★★★/9.2

Features	10
Value	8
Quality	10
Star Rating	★★★★★/9.3

whose images appear softer and more silver-screen-like. However, even the top-end cameras on test don't approach the quality of a decent feature-film camera.

Pro models tend to be all business and no fun; they lack the frivolous features that consumer models come stuffed with – such as night vision and visual effects. Such special effects typically include negative-image and sepia modes, and the consumer models also tend to offer a still-camera mode, and use Flash memory cards – just like a digital still-camera.

However, be warned: a good digital camcorder doesn't necessarily make a good stills camera just because it has a still-image feature. By the same token, a digital-stills camera that offers a mini-movie mode offers little competition to any digital camcorder.

Macworld's buying advice

In the consumer bracket, there are two key criteria by which you should judge: quality and "gadget factor". The Canon MVX1i offers the best image stabilization and ease of use. However the Sharp Digital Viewcam offers tons of nifty gadgets, such as infrared night vision and a detachable viewfinder with remote control. Essentially, your choice depends on what you're looking for in a camera – a fun time or the best quality possible.

In the pro-camera field, there are two front runners – the Canon XLS1 and the Sony DSR-PD150P. Both have excellent features, and are similarly priced. The bulkier Canon has the appeal of looking the part, whereas the Sony is more compact. The Sony narrowly wins out because its DC Cam format is more robust – although there's no discernable difference in image quality. **MW**

Macworld.co.uk Search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month.

Making AirPort 1.0 cross-platform

Tips and expert advice for savvy Macintosh users. By Chris Breen



Anyone who's had the opportunity to use AirPort will understand that this form of wireless networking is one of the most elegant and exciting technologies to come from Apple in ages. With little more than two AirPort-equipped Macs, you can transfer files between computers in different rooms of your house and surf the Web from the back porch, without being constrained by wires.

But why should Macintosh users have all the fun?

We're well aware that the world is full of PCs and that your wireless setup may include one. Maybe a misguided loved one, who refuses to abandon her laptop PC, would like to surf the Web and check her email via your Mac's broadband Internet connection – or perhaps she'd like to use file sharing to swap MP3s with you. Your two-platform world can indeed be a harmonious one if you bring that Windows PC into the AirPort mix.

Apple has recently unveiled AirPort 2.0, which allows Windows PCs to join in the fun. But if you've got an original Base Station 1.0, there's still a way to get PCs in on the action.

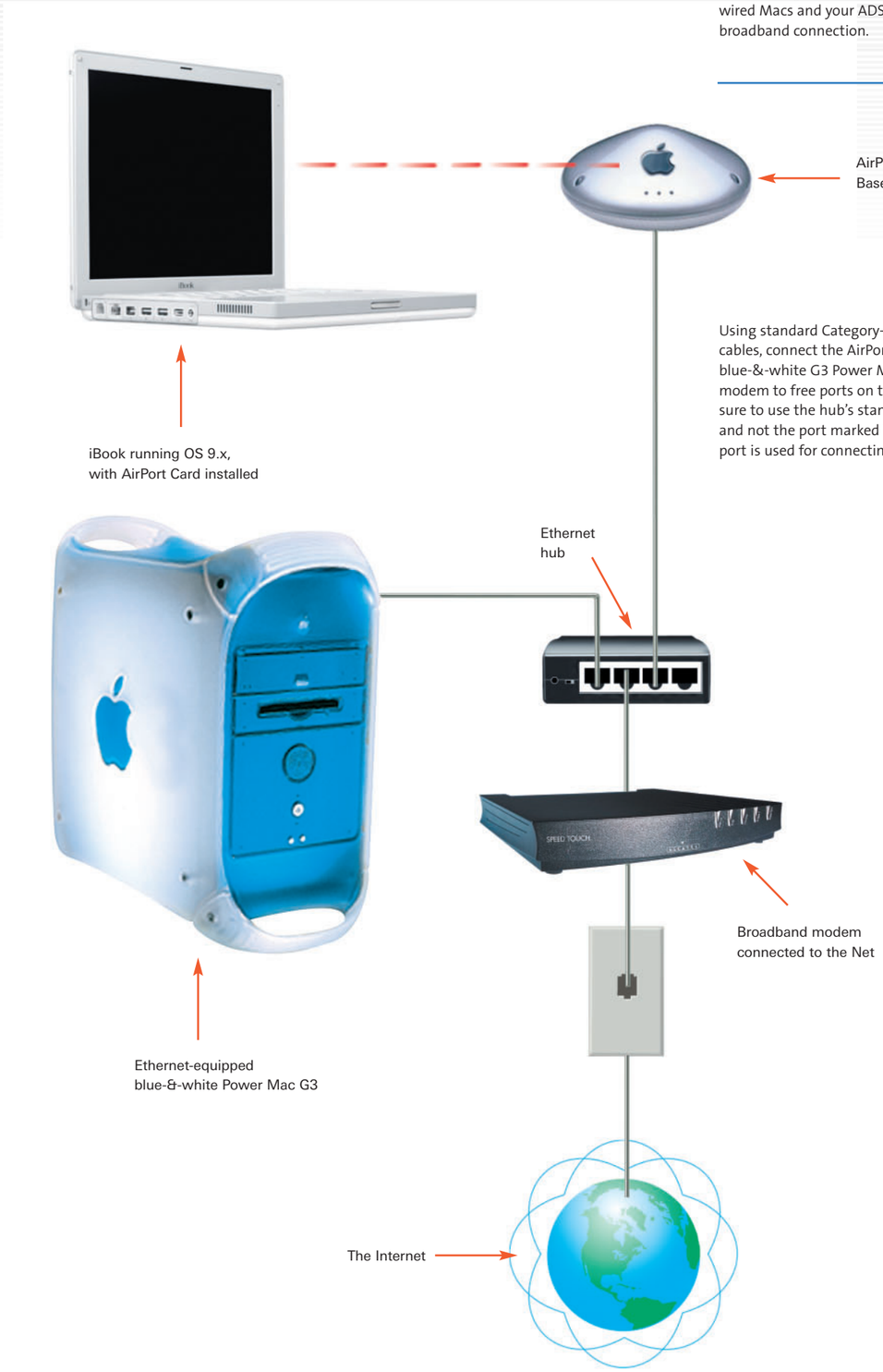
We'll show you how to create a dual-platform wireless AirPort 1.0 network with which you can not only swap files among all your computers (we'll tell you how to do it with the wired ones, too) but also share your broadband Internet connection.

First we'll create an example AirPort-based network for a group of Macs, and then we'll guide you through configuring a PC's hardware and software to join that network. If you've already established your AirPort network, you can skip to step 5, which gets right into the PC-related tasks, including adding a wireless device.

continues page 132

What you'll need

- At least one Mac running Mac OS 9, with an AirPort Card (£67; Apple, 0800 039 1010). We've used a new iBook in our example network, but any AirPort-compatible Mac will do.
- One (or more) Ethernet-equipped Mac running Mac OS 9 (optional). We've used a Power Mac G3 in our example network; your network may include a similarly non-AirPort-compatible Mac.
- An AirPort Base Station (£203; Apple, 0800 039 1010), which acts as a wireless router to connect your computers to the Web and to one another.
- An Ethernet hub or switch, such as the £60 NetLine Switch/5 or the £80 NetLine Switch/8 (Proxim, 07092 268 906).
- Preferably, a broadband connection – either via ADSL (Asymmetric Digital Subscriber Line), or cable modem. No more than two people should share a 56K modem.
- Category-5 Ethernet cables. Also known as Cat-5 cables, they connect Macs to the Ethernet hub, and provide the connections between your hub, AirPort Base Station, and broadband modem. They generally cost less that £3.50 and are available from Maplins (**www.maplins.co.uk**).
- At least one PC running Windows 95, 98, ME, or 2000, with a free ISA slot, PCI slot, or USB port (Windows 98, ME, or 2000 is required for the USB connection).
- A Windows-compatible, Wi-Fi-certified, IEEE 802.11b-compliant wireless networking device, such as wireless networking products available from Proxim (**www.proxim.com**). See step 5 for advice on which ones to choose. Desktop PCs will require either a USB wireless device or a PCI- or ISA-based wireless adaptor, and a PC Card. Laptop PCs require a PC Card. The total cost of these devices ranges between £35 and £170.
- Miramar Systems' PC MacLAN (£207; Computers Unlimited, 0208 358 5857) installed on any PCs in your network; it's necessary for sharing files between Macs and PCs.



1 Set up your Mac network Begin by making the proper physical connections between the Macs on your network. This includes not only installing AirPort cards but also running cables between your non-AirPort-wired Macs and your ADSL, cable, or satellite broadband connection.

Using standard Category-5 (Cat-5) Ethernet cables, connect the AirPort Base Station, the blue-&-white G3 Power Mac, and the ADSL modem to free ports on the Ethernet hub. Be sure to use the hub's standard Ethernet ports and not the port marked "uplink." (The uplink port is used for connecting multiple hubs.)

2 Copy settings to your AirPort Base Station Configure the Base Station to communicate with the Macs and share your broadband Internet connection. Have ready your TCP/IP settings, given to you by your ISP when you set up your broadband service.

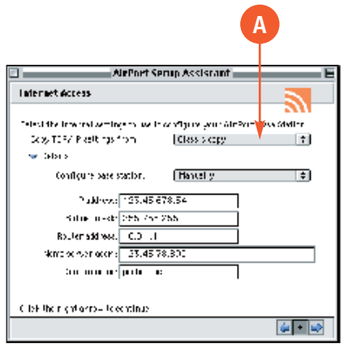
3 Set up your Base Station and Macs to share an IP address The AirPort Base Station can operate as a DHCP (Dynamic Host Configuration Protocol) server – a device that allows many computers to access the Internet via a single IP address.

4 Configure your Macs for the network Now that your Base Station is ready to share an IP address among your Macs, your Macs must be prepared to use the Base Station and its settings. Here's how to set up the Macs on your network to share that single IP address.

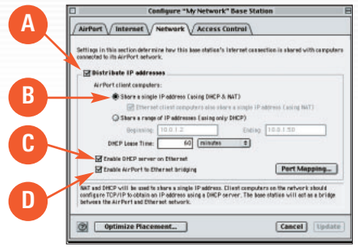
Configure the AirPort-equipped Mac to log-on to your ISP. Then use the AirPort Setup Assistant (in your Mac OS 9.X volume: Applications: Extras: AirPort) to copy those settings to the Base Station. For a network like the one in our example, you'd set up the Base Station this way:

At least version 1.3.1 of Apple's AirPort software running, launch the AirPort Setup Assistant on the AirPort-enabled iBook, and click on the Set Up An AirPort Base Station option. In the Internet Choice window, click on Yes to indicate that the iMac is configured to access the Internet.

If your ISP requires Point-to-Point Protocol over Ethernet (PPPoE), click on Yes in the PPPoE window. Otherwise, click on No. In the Internet Access window, select the TCP/IP settings you want to copy to the Base Station **A** and click on the right arrow.



In the next window, name your network (this name is your network's SSID, or Service Set Identification) and provide the password you'll enter when you need to configure the AirPort network with the AirPort Admin Utility. Finally, click on Go Ahead to install these settings on the Base Station. Wait while the settings are transferred to the Base Station.



Launch the AirPort Admin Utility from the AirPort-enabled iBook (also found in the AirPort folder), select your AirPort network, and click on Configure.

Access the Configuration window by entering the Base Station password that you created in step 2, and then click on the Network tab. Choose the Distribute IP Addresses option **A** and the Share A Single IP Address (using DHCP & NAT) option **B**.

When these options are selected, your Base Station acts as a router – the contact point between your network and the Internet. As far as your ISP knows, you're using the single IP address allotted you from a single computer. In reality, the Base Station creates an internal network – distributing IP addresses to each computer within that network – that can share the single IP address provided by your ISP.

Our initial setup has a Mac connected to the network via an Ethernet cable. Because this Mac will access the Internet and the wireless network, choose the Enable DHCP Server On Ethernet option **C** and the Enable AirPort To Ethernet Bridging option **D**. Activating these options allows computers connected via Ethernet to join the network. If your network lacks such a wired connection, do not select these options.

On each Mac, open the AppleTalk control panel and, from the Connect Via pop-up menu, select the method by which your Mac is connected to the Base Station – AirPort if your Mac has an AirPort card, as does the iBook, and Ethernet if your Mac is wired to the hub, as is the Power Mac. Close and save.

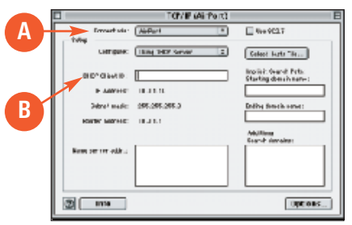
Open the TCP/IP control panel, and select Configurations from the File menu. Select the appropriate configuration in the resulting window, click on Duplicate, create a new configuration and name it, and then click on the Make Active button.

In the TCP/IP window, be sure that the Connect Via pop-up menu **A**. displays the connection protocol appropriate for your Mac (AirPort or Ethernet). From the Configure pop-up menu, select Using DHCP Server **B**.

Don't be concerned with the empty fields. The information needed to establish your Internet connection, such as IP address and subnet mask, is stored in your Base Station. To confirm this, open the AirPort Admin Utility and click on the Internet tab.

Now log on to your AirPort network with the iBook by selecting the network's name from the AirPort control strip module.

Your wired Mac will join the network automatically.

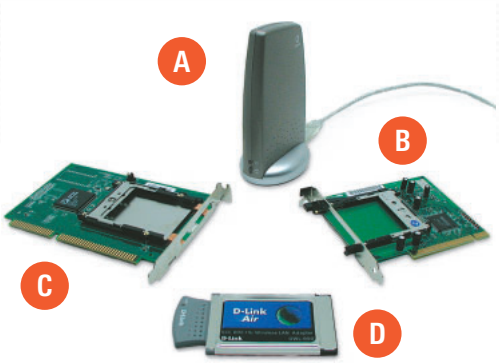


continues page 135

5 **Choose your wireless device** The wireless device you use will depend on the type of PC you have and whether it has PCI or ISA slots, USB ports, PC Card slots, or a combination of these. Also, some wireless devices work better than others.

6 **Add a USB or PCI device to your PC** Your Macs should now be able to communicate with one another as well as with the Internet over AirPort. Now it's time to add the PC. How you do so depends on the kind of PC wireless device you chose in step 5.

7 **Add an ISA adaptor** ISA Wireless adaptor cards are not recognized by Windows' Plug-&-Play feature – meaning that you can't simply install a driver and expect Windows to recognize the card when you insert it into the ISA slot. Instead, you must manually configure such devices.



There are four ways to connect a wireless client to your PC – via an ISA (Industry Standard Architecture) slot, a PCI slot, a USB port, or a PC Card. If you have a PC laptop, the obvious choice is a wireless PC Card. But if you have a desktop PC manufactured in the past couple of years, it's likely that your computer has ISA, PCI, and USB. Which should you choose?

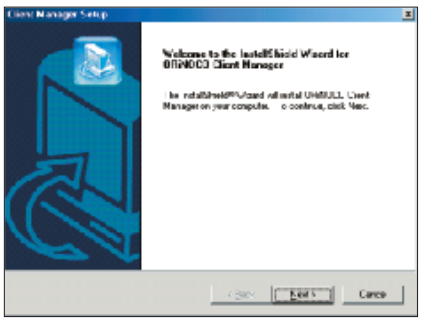
If your desktop PC carries USB ports, purchase a USB-compatible wireless device such as the Orinoco USB Client £104, Westcon, 01753 797 800) **A**. These devices are less expensive than their ISA or PCI counterparts. USB wireless devices are also easier to install and configure. Most PCs carry both ISA and PCI slots. If your PC does not have USB and has only PCI slots, your choice is simple – get a PCI adaptor, such as the SkyLine PCI Adaptor Wireless adaptor **B** (£62; Proxim, 07092 268 906).

If your PC sports both kinds of slots, get an ISA adaptor, such as the Orinoco ISA Adaptor **C** (£48; Westcon, 01753 797 800). Wireless devices attached to the ISA slot in a PC that has both ISA and PCI slots work more reliably with AirPort.

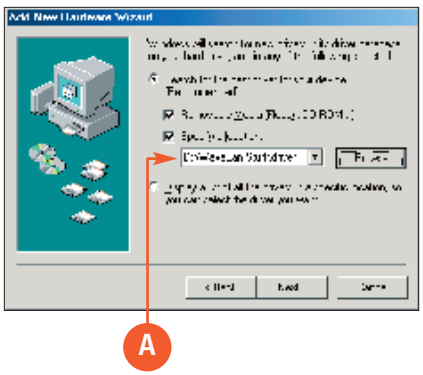
These PCI and ISA adaptor cards are not wireless devices themselves; they provide only a place to install a wireless PC card – for example, a D-Link PCMCIA Wireless LAN PC Card **D**, or a SkyLine 11MB PC Card for Macs and PCs (£129; Proxim, 07092 268 906). To complete the connection, you must add such a PC wireless card. To ensure compatibility, use an adaptor and PC Card from the same company.

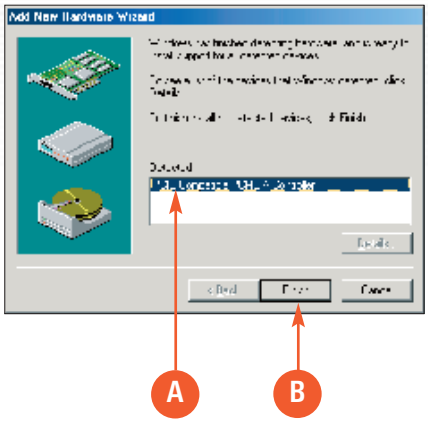
Before connecting a wireless device to your PC, open the device's manual and carefully follow the installation instructions. Remember, this is Windows, and installing hardware under Windows can be tricky.

You'll probably have to install drivers and a configuration manager prior to installing the hardware itself. These drivers must be in place in order for Windows' Plug-&-Play feature to recognize the device. The necessary software should be on the CD or floppy disk that accompanies the device. You'll install it using an installation wizard like this one for Orinoco Client Manager.



The wizard will offer to locate the most appropriate available drivers. In some cases, you should allow this to occur; in others, you may need to direct the installer to a particular folder on the installation disk **A**. The manual that accompanies your wireless device will tell you the best way to proceed.





For Windows to recognize an ISA adaptor, you must first open up the PC and insert the adaptor into a free ISA slot. Then run Windows' Add New Hardware control panel (select Control Panel from the Start menu's Settings command and double-click on Add New Hardware in the resulting window).

The Add New Hardware Wizard will ask if you'd like Windows to automatically detect any new system hardware. Click on Yes and then on the Next button. When Windows has finished searching for hardware, click on the Details button. You'll see that Windows has found a PCIC-compatible PCMCIA Controller card **A**.

Select this item, and click on the Finish button **B** to install the driver for the adaptor. Windows will request that you restart your PC. Click on OK to restart.

With the adaptor in place and recognized by the PC, insert the PC card into the adaptor. The Add New Hardware Wizard will appear.

When the window that asks "What would you like Windows to do?" appears, insert the installation disk (CD or floppy) that came with your wireless PC Card. Select Search For The Best Driver For Your Device (Recommended). Windows will check the installation disk for PC Card drivers and install them. Click on Finish when the installation is complete and, if Windows asks you to, restart your PC.

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8 Configure the wireless device to become part of the network Regrettably, wireless PC devices don't come with configuration applications as intuitive as Apple's AirPort Setup Assistant – these won't automatically seek out and join your AirPort network.

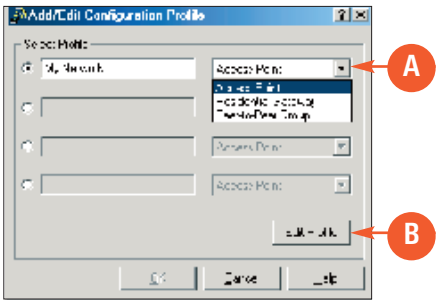
9 Enable WEP encryption AirPort supports 40-bit WEP (Wired Equivalent Privacy) key encryption (sometimes referred to as 64-bit encryption) – a scheme that attempts to keep others from "listening in" on your wireless network.

10 Share files The simplest way to share files between a Mac and a PC is with Miramar Systems' PC MacLAN. PC MacLAN lets you mount Windows volumes on your Mac from the Chooser and access Mac volumes on the PC in Windows' Network Neighborhood.

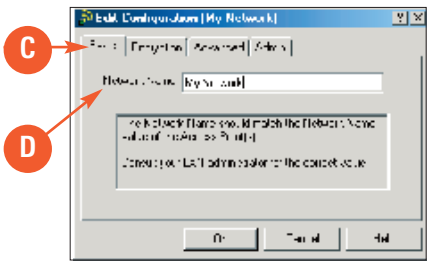
Orinoco Client Manager – the wireless-configuration application that comes with Orinoco WaveLAN wireless devices – is typical of most of these programs. Here's how to set it up:

Click on the Programs item in the Start menu, locate the Orinoco folder, and select the Client Manager application within.

When the Client Manager appears, select Add/Edit Configuration Profile from the Actions menu. In the resulting Select Profile window, be sure that Access Point is selected in the right menu **A**; then click on Edit Profile **B**.

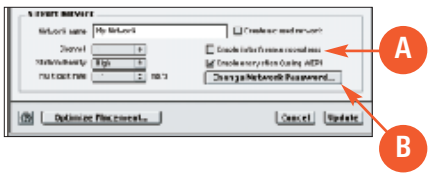


In the Edit Configuration window, select the Basic tab **C**, and in the Network Name field **D**, enter the exact name of your AirPort network, or SSID, which you established in step 2 (capitalization counts).



Click on OK to leave the Edit Configuration window and OK again to close the Select Profile window. The Client Manager will search for the network with the SSID you've provided and join that network when it's found.

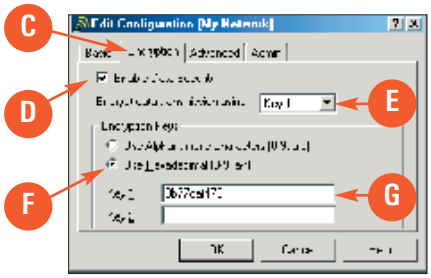
Enable encryption on the Base Station by launching the AirPort Admin Utility from the AirPort-enabled iBook. Go to the AirPort pane of the Configuration window, and select Enable Encryption (Using WEP) **A**. Click on the Change Network Password button **B**, and in the next window, enter and confirm your password. Click on the Update button.



Click on Configure, enter the configuration password, and select Equivalent Network Password from the Base Station menu. The string of ten characters that appears in this window is the WEP password your PC's Client Manager will use. Write it down.

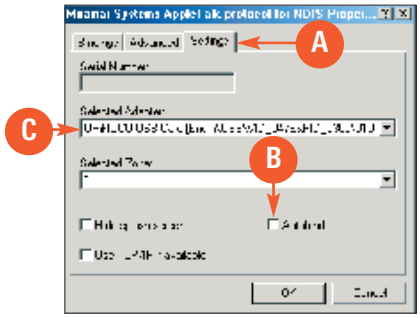
On the PC, launch Client Manager and select Add/Edit Configuration Profile from the Actions menu, click on the Edit Profile button, and click on the Encryption tab **C**. Select the Enable Data Security option **D**, choose Key 1 from the Encrypt Data Transmission Using menu **E**, select the Use Hexadecimal (0–9, a–f) option **F**, and in the Key 1 field **G**, enter the 10-character WEP password.

Click on each window's OK button to establish encrypted communication between the PC and the Base Station. If you have many PCs in your network, repeat this process for each.



Install PC MacLAN (£207; Computers Unlimited, 0208 358 5857), and restart your PC. On restart you'll likely see an error message indicating that PC MacLAN was unable to register your PC on the network. To fix this, open the PC's Network control panel (choose Start: Settings: Control Panel, and then double-click on the Network control panel), select the Miramar Systems AppleTalk Protocol For NDIS entry, and click on the Properties button.

In the next window, click on the Settings tab **A** and deselect the Autobind option **B**. Select your wireless device from the Selected Adaptor pop-up menu **C**. Click on OK in the open network windows, and restart the PC when Windows asks you to. Launch PC MacLAN File Server, and click on the Start Server button.



To share files on the PC, click on PC MacLAN's Users And Groups button, click on New, enter a name and password, and assign yourself access privileges. Click on the Share Folders button, select the folders or volumes you want to share, and choose who can share these files and volumes. Click on Done.

To access your networked Mac volumes, double-click on Network Neighborhood on the PC's desktop. To work with your PC files from the Mac, select them from the Chooser.

Now you're all set to share files, surf the Web, and send email wirelessly on a mixed-platform network. **MW**



■ **Apple's AirPort 2.0 is built to accept Windows PCs on the wireless network. See pages 24-25 for more details.**



Cell mates

Dreamweaver's cells may have limitations, but they're often the only solution. **By David McFarland**

Cells are very basic creatures with some severe limitations. For example, all of the cells in a row share the same height – a cell can't be taller than the cell next to it – which can pose some serious design problems.

Consider "Dreamweaver line art", for example. In the top figure, the left cell containing the Macworld graphic is much taller than the top banner to its right. In fact, it's as tall as both banners to its right, as shown in the bottom figure. Ideally, you'd want the Macworld graphic cell to straddle the two cells to its right, as shown in the second banner example. Fortunately, Dreamweaver provides a few ways of convincing cells to work well together.

The trick is to merge cells – combine their area – to create a larger cell that spans two or more rows or columns. In this example, the solution is to merge the two cells in the left column. This single cell holds the Macworld image, while perfectly aligning the two cells in the adjacent column. By using this technique, you can create some very complex designs. In fact, if you view tables created in Dreamweaver's Layout mode, you'll notice that Dreamweaver itself makes extensive use of this technique.

Merging rules

To merge cells, start by selecting the cells you wish to merge. You can only merge cells that form a rectangle or square. You can't, for instance, select three cells in a column and only one in the adjacent row, as in an L shape. Nor can you merge cells that aren't adjacent; in other words, you can't merge a cell in one corner of the table with a cell in the opposite corner.

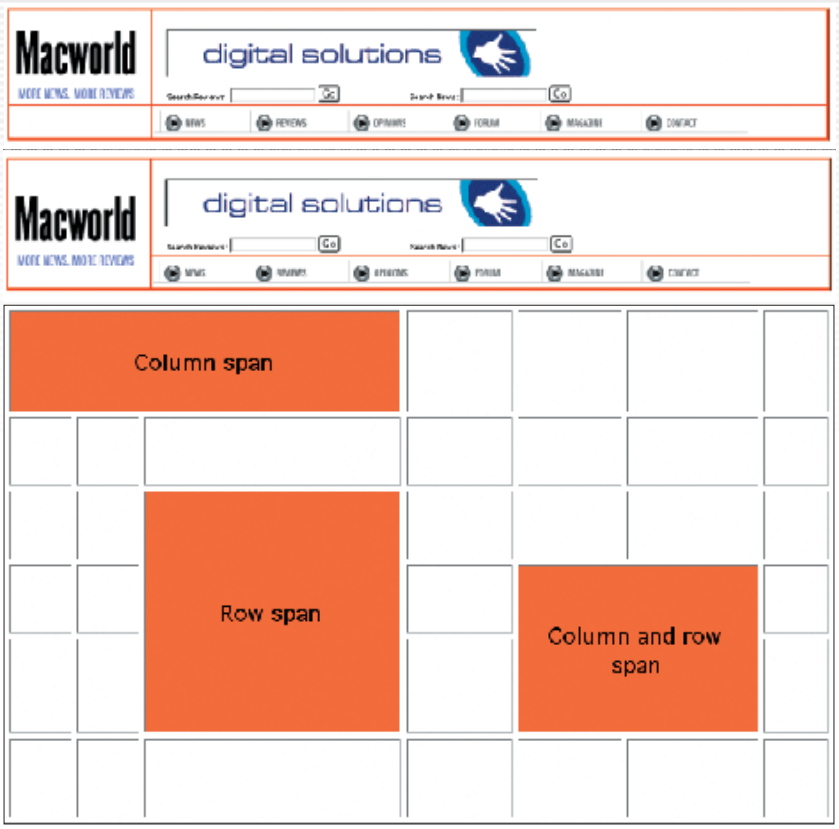
Then, on the Property inspector, click the Merge Cells button (see "Merging and splitting cells"), or choose Modify-Table-Merge Cells.

Dreamweaver joins the selected cells, forming a single new super cell. You may also find yourself in the opposite situation: you have one cell that you want to divide into multiple cells. To split a cell, click inside, or select, a single cell. Click the Split Cells button in the Property inspector. (Once again, you can trigger this command in several alternative ways. For example, you can choose Modify-Table-Split Cell. And if you prefer keyboard shortcuts, you can press Control-Option-S. You can even Control-click the selected cell and then choose Table-Split Cell from the contextual menu.)

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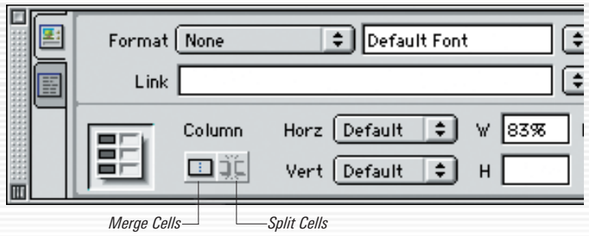
Dreamweaver line art

You can create larger cells that span multiple rows and columns by merging adjacent cells. This trick can help solve some design issues and let you align items that normally would not line up (top). The result can join multiple columns into one, multiple rows, or both at once (bottom).



Merging and splitting cells

The Merge Cells button is only active when you've selected multiple cells. The Split Cells button only appears when you select a single cell or have clicked inside a cell.



When the Split Cell dialog box opens (see "Dividing cells), click one of the buttons to indicate whether you want to split the cell into rows or columns; type the number of rows or columns you wish to create; click OK.

If you split a cell into columns, everything in the cell winds up in the right column, with the new, empty column or columns to the left. When you split a cell into rows, the contents end up on in the top row.

Nesting tables in Standard View

By merging cells, you can create complex tables that offer precise control over your layouts. If you use Layout mode to create a detailed, handcrafted design, you'll see how Dreamweaver can generate complex tables using this technique.

But on the Web, simpler is usually better. Sometimes, instead of spending time and effort chopping up and merging cells to create a certain look, the best solution is to nest tables – place a table within a table – instead of creating one complex table (see "Top table" below).

Since a table cell acts just like a mini document, you can put anything that you'd normally place on a page inside a cell – graphics, text, links and, yes, even tables. Simply click a cell and use one of the techniques described above to add and format the table.

You can even place more than one table in a single cell. In "Top table", for example, three tables are nested in the right-hand cell of the main table. They're in the flow of the cell contents, separated into individual paragraphs. By compartmentalizing and aligning information, nested tables make complex Web pages easier to both build and edit.

Be aware that there are some limits to nesting tables. For example, it's best to not nest more than three tables deep; in other words, a table inside of a table inside of a table. While most browsers understand and are able to correctly draw tables that are more deeply nested, such complexity can be difficult to render, resulting in pages that are slow to load, especially on older computers.

Tabular data

So far, you've learned about using tables for complex Web page designs, using tricks like merging cells, invisible spacer images, and Dreamweaver's Layout view. But what about the original purpose of a table – displaying data in an orderly manner? You can still do that, of course, and Dreamweaver provides a couple of tools to make the process of dealing with tabular data run smoothly.

Your boss emails you your company's yearly sales information, which includes data on sales, profits, and expenses organized by quarter. She asks you to get this up on the Web for a board meeting she's having in half an hour.

This assignment could require a fair amount of work: building a table and then copying and pasting the correct information into each cell of the table, one at a time.

Fortunately, Dreamweaver spares you that headache. It can create a table and import data into the cells of the table's rows and columns, all in one pass.

In order for this to work, the table data you want to display must begin life in a delimited format – a task that most spreadsheet programs, including Excel, or database programs, such as Access or FileMaker Pro, can do easily. (Choosing File-Export or File-Save As in these programs usually does it.)

In a delimited file, each line of text represents one table row. Each line is divided into smaller units using a special character called a delimiter – most often a tab, but possibly also a comma or colon. Each unit represents a single cell in the row. In a colon-delimited file, for example, the line Sales:£1,000,000:£2,000,000:£567,000:£12,500 would be converted by Dreamweaver into a row of five cells, with the first cell containing the word Sales.

Table talk

Once you've saved your boss's spreadsheet as a delimited file, you're ready to import it into a Dreamweaver table:

1. Choose File-Import-Import Tabular Data.

The Import Table Data dialog box appears (see "Import duty" above).

2. Click the Browse button. In the Insert Tabular Data dialog box, find and open the delimited text file you wish to import.

A delimited file is no longer a spreadsheet, but a plain text file. Navigate to and double-click the file in the dialog box.

3. Select the delimiter that was used to separate the data in the text file. The choices are Tab, Comma, Colon, Semicolon, or Other. If you select Other, an additional field appears, in which you can type the character you used as the delimiter.

4. Select a table width. Choose Fit to Data if you want the table to fit itself to the information you're importing – an excellent idea when you aren't completely sure how much information the file contains. (You can always modify the table once it has been created and the data imported.)

On the other hand, if your Web page needs a table of a certain size, you can specify it by selecting the Set button and typing a value in the field next to it. Select pixel or percentage value.

5. Set Cell Padding, Cell Spacing, and Table Border, if you like.

6. Select a formatting option for the top row of data.

Standing out

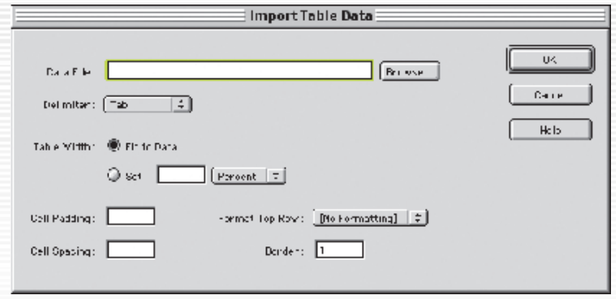
If the first line in the text file has column headings – Quarter 1 Sales, Quarter 2 Sales, and so on, for example – Dreamweaver lets you choose Bold, Italic, or Bold Italic to set this header row apart from the rest of the table. (No Formatting keeps the top row consistent with the rest of the table.)

7. Click OK to import the data and create the table.

If you'd like to jazz up your table a bit, but are short on time, you can apply one of Dreamweaver's pre-installed table designs (see "Canned goods" below). **MW**

Import duty

The Import Table Data dialog box lets you select a text file of data to import and choose formatting options for the table.

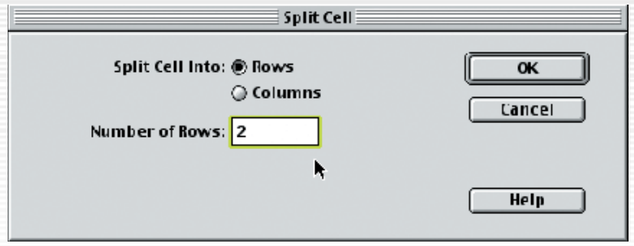




There's more on importing animation in Dreamweaver 4: The Missing Manual *by David Sawyer McFarland (Pogue Press/O'Reilly; ISBN: 0-596-00081-2). This article is the third of a series of* Macworld *extracts from the book, which costs £17.50 from all good booksellers.*

Dividing cells

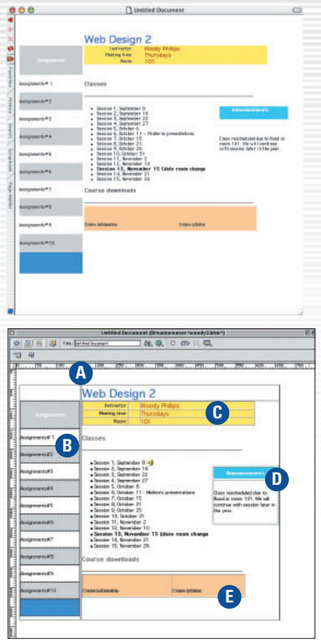
The Split Cell dialog box lets you divide a single cell into multiple cells. You can choose whether to divide the cell into rows (multiple cells on top of each other) or columns (multiple cells side by side).



Top table

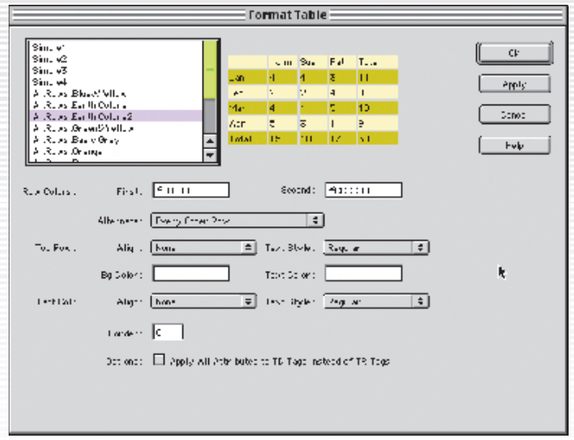
Top: This page looks complicated, but in Dreamweaver (bottom), it breaks down to a series of simple tables. The outside table (A) is a one-row, three-column table with a series of nested tables (B, C, D, E). The first cell contains another basic table (B), which has twelve rows and one column. Using alternating colours for each cell helps set off the information inside.

The third column of the primary table holds the main content of the page; three tables (C, D, E) are placed within the flow of the cell. One nice trick: use the Align property of a table to create a "floating" sidebar within the normal flow of text. The announcements table here, for instance, is aligned to the right, while text in the cell wraps around it. Note that aligning a table like this is only possible in Standard view.



Canned goods

Dreamweaver can apply canned designs to a table of data. Select a table in the document window, and choose Commands-Format Table. You can then select one of the seventeen different designs from the list. You can even create your own design, using the option menus. Unfortunately, you can't save a design you create. While these designs aren't useful when you're using tables to lay out a page, they are a quick way to spruce up a calendar or spreadsheet.



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secrets: OS X

Apps to order

Use Unix, but avoid the command line. By David Morgenstern

Tell the truth: you're intimidated by Mac OS X. The Aqua interface isn't a problem, but OS X's Unix underpinnings bring out the technophobe in anyone.

Mercifully, Mac developers are rushing to the rescue with utilities that let you tap Unix services – for everything from scheduling tasks to running an industrial-strength Web site – without having to use the still-daunting command line.

Beneath OS X's surface is an array of Unix programs (called "services") that handle jobs such as Web serving and security. Each has its own set of controls and method of configuration, usually involving a text file – unfamiliar territory to many Mac users. OS X's System Preferences provides access to some settings, but not all of them; and many optional features are turned off in the default installation.

Mac vendors and developers are now offering new utilities that provide users either a Mac-like graphical interface on top of a traditional Unix service, or an improvement on existing features in OS X.

Most of these utilities require that BSD Unix Subsystem be enabled. Although this package was a standard part of the Mac OS X 10.0 installation, Mac OS X 10.1 reduces it to an option. When installing the OS X 10.1 update, make sure the BSD Subsystem option is selected (in the Custom Install window).

OS X's Unix side can make for some unwelcome chores that intrude on your workflow, but two utilities can improve productivity.

As new OS X users soon discover, Unix is much more vigilant than the classic Mac OS about restricting access to shared files – and setting permissions using the standard Show Info command can become a time-consuming and tiresome task. Longtime Mac developer Bare Bones Software offers Super Get Info ($20; **www.barebones.com**), which improves on and simplifies the Show Info window.

File fillip

Super Get Info provides a window that allows you to quickly view file information, permissions, and a preview of a file's contents. Even better, it can open multiple windows so you can compare settings among files and then apply group, owner, and permission settings to a file or even all items in a folder. And instead of a thumbnail, the preview image is big, providing a real look at the file.

Another new and useful utility is CronniX 1.4.1, by German developer Sven Schmidt (**www.koch-schmidt.de/cronnix/**). This free software applies an Aqua interface to cron (or crontab), the powerful task-scheduling scripting service. With OS 9, you have to buy a separate task-scheduling utility, but this function is built into OS X, so why not take advantage of it?

Let's say you want to schedule a weekly AppleScript that backs up certain files on your hard drive. You can drag-&-drop that AppleScript (or any script, such as a CGI script or PerlScript) into CronniX to easily build the schedule, instead of having to type the path names and directory structures in the Terminal window. Composing the command via Terminal wouldn't be terribly difficult, but it's just not the Macintosh way.

In the classic Mac OS, Web sharing is relatively secure, but in OS X you must be more careful. If you decide to allow remote log-in via Telnet or to run a Web server, you'll need some additional security and adjustment of ports. Mac OS X comes with ipfw, a network-firewall package, and because ipfw has been extended by third-party developers, you no longer have to make a trip to the Terminal application.

To that end, Brian Hill says he designed the $25 BrickHouse 1.1b5 Firewall utility (**http://personalpages.tds.net/~brian_hill/brickhouse.html**) with the Web-serving novice in mind. In addition to an easy interface, it comes with settings that help prevent denial-of-service and other resource-based attacks over the Internet. It also provides filters for common network configurations such as DHCP (dynamic host configuration protocol), frequently used with broadband access.

Fire fly

One of BrickHouse's competitors, Mike Vannorsdel's $25 Firewalk X 1.3.7 (**www.pliris-soft.com**) provides feedback on your firewall's status, sending notification via email when a new event occurs. Using Firewalk X, you can create and save different sets of rules and switch between them on-the-fly.

A different security tack is offered by WünderMoösen's The Moose's Apprentice 10.1.4 (**www.wundermoosen.com**). This $15 utility generates a daemon that compares important system files to their last saved versions. If a file has been modified without your knowledge, The Moose's Apprentice will alert you and let you step backward though the file's history to undo the unwanted changes.

Mac OS X comes with the industrial-strength Apache Web server, which provides great performance – yet its installation and administration can be arcane to many people who run Web sites.

A company with much experience developing Unix and Apache for the Mac, Tenon Intersystems offers iTools 6.1 (**www.tenon.com**) for Mac OS X and Mac OS X Server. The $399 package ($299 for users of Tenon's MachTen and WebTen products or any commercial Mac OS-based Web-server software) brings Aqua and HTML interfaces to Apache, so someone other than a Unix guru can administer the server.

Supporting remote administration, iTools provides a wide range of extras for Apache, including support for the Secure Socket Layer encryption protocol used in online commerce; WebMail, a service that lets remote users access their mail; a domain-name server; and a search engine. The package also comes with a set of third-party Apache modules.

Tracking the visitors to, and usage of, your site is very useful, but reading log files containing that information can be overwhelming. Flowerfire CQ now offers an OS X CGI version of its powerful Sawmill 6.2.1 server-log-analysis tool ($99 for one user, $399 for an organization with fewer than 50 users; **www.flowerfire.com**); according to the company, it runs three times faster than the Carbonized Mac OS X version. While providing general statistics, such as a list of the ten most popular files on your server, Sawmill allows you to analyze usage patterns on your site by tracking each visitor's progress, page by page. On top of all that, it can provide live statistics and use custom filters to analyze viewing habits.

Alter effects

Some utilities are only for serious work, but TinkerTool 1.5 (**www.bresink.de/osx/**) also appeals to Mac users' lighter sides. Marcel Bresink's freeware controls a grab bag of hidden preferences in the Finder. Some are minor, such as animation effects in the Dock; however, others provide more functionality. For example, TinkerTool can fine-tune font antialiasing to improve appearance on low-resolution analogue displays, or it can show Terminal in a transparent window.

But keep in mind that TinkerTool's feature set may change often, depending on the settings that Apple engineers decide to implement (or hide) in each release of OS X. Some features in earlier versions have been rolled into the current Finder's Preferences panel. "In an extreme case, none of TinkerTool's features might survive, but I don't really expect that," says Bresink.

The field is open for Mac OS X utilities such as these. Programs will come from commercial developers, as well as those who start out writing apps to simplify their lives, and then offer them for free to the Mac community. MW

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Mac OS X tips and tricks

Back to 9

Firmware updates can't be installed when you boot your Mac from OS X. To perform such updates, first boot from OS 9.

About box info

The OS X 10.1 About box has a hidden feature (now don't get your hopes up, it's not as cool as the old About the Finder Easter Egg in Mac OS 9.2 and earlier). Select About This Mac from the Apple menu and click once on the Version number. When you do you'll see the build version of OS X. Click again and your Mac's serial number is displayed.

Slow motion Dock

If you've witnessed just about any demo of OS X, you've seen the minimize-in-slo-mo trick where a window is ever-so-slowly sucked into the Dock. To perform this same trick with your copy of OS X, just hold down the Shift key while clicking on a window's Minimize button

Application customization

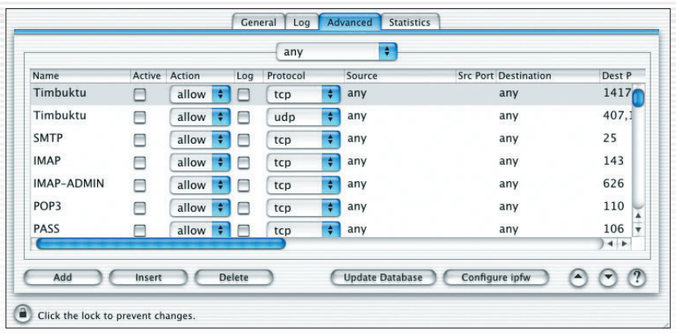
You probably know that in order to customize the OS X Toolbar, you can simply press the Toolbar button (that clear button up there on the right corner of a window) while holding down the Shift key.

But you may not know that in order to pull this same kind of customization trick with OS X applications (those that support OS X toolbars, natch), you hold down the Command and Option keys while clicking on this button.



IPso facto

The Moose's Apprentice 10.1.4 provides an editor for many settings, such as IP filters. It notifies you of any modifications to the settings and lets you undo unwanted changes.



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Spot's the difference

Spot colours can add vibrancy to prints, but beware the pitfalls. By David Blatner

Almost every colour image in print consists of four ink colours: cyan, magenta, yellow, and black (CMYK). But CMYK can't reproduce some parts of the spectrum, such as an electric blue or a metallic silver. These require spot colours. They also require finesse on your part, especially in Adobe Photoshop. Here we'll show you techniques for using Photoshop's spot-colour tools correctly.

If you're colouring hard-edged vector artwork (such as bézier shapes or type) with a spot colour, it's best to apply colour in your illustration program or page-layout application. However, Photoshop is called for when spot colours are part of a bitmapped image. For example, spot colours are key to duotones, which typically boost the tonal range of black-and-white photographs by adding a spot colour, especially in the highlights and mid-tones. You can also make an image pop by adding a solid spot colour to just one portion of an image – for instance, printing your company logo in colour in the middle of a greyscale photo.

Swatch time

Instead of using ambiguous descriptions – "dark brick-red", for example – designers and printers rely on swatch books of numbered samples for spot-colour names. Pantone (**www.pantone.com**) makes the most-common swatch books in the UK; spot colours are generally referred to by a Pantone Matching System (PMS) number.

The traditional way to add Pantone colours to Photoshop images is to convert a greyscale image to Duotone mode (Image-Mode-Duotone). But this technique doesn't work when you want areas of solid spot colour, because in a duotone image, every pixel is a blend of two or more inks.

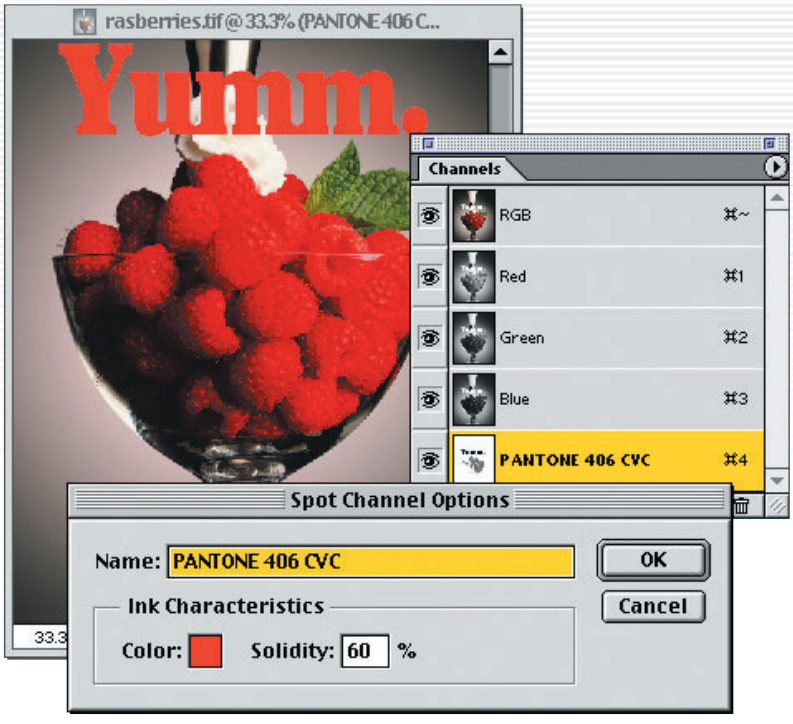
When you want areas of solid colour, you'd normally choose a colour from Photoshop's Color Picker (the dialog box you get when you click on the foreground or background colour swatch in the Tool palette), and then paint or fill a selection. Photoshop lets you do this with Pantone colours too. The result, unfortunately, is a cruel joke: the colour appears correct on screen, but when you try to print colour separations, the spot colour won't separate onto its own plate. It appears on one or more of the other colour plates, resulting in a muddy mess (because when you choose a colour this way, you're not picking a spot colour – you're picking an RGB or CMYK simulation of a spot colour).

The only way to add a non-duotone spot colour to a greyscale or CMYK image in Photoshop is to create a spot-colour channel in the Channels palette. You can do this by ⌘-clicking on the New Channel button at the bottom of the Channels palette, or by selecting New Spot Channel from the pop-up menu.

continues page 146

Photoshop's spot-colour channels

When you ⌘-click on the New Channel button, Photoshop lets you specify a spot colour and its solidity value.



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Print publishing tips and tricks

If the folio on your QuarkXPress page is different from the number in the Document Layout panel, highlight the folio on the page and hit ⌘-3. The folio is now linked to the Document Layout, and will be updated automatically.

When you create a new spot-colour channel, Photoshop lets you pick both the colour and its solidity. But remember the most important rule when working with spot colours: never trust how they appear on screen. Many spot colours can't display correctly on screen, and even mundane colours often don't appear properly because Photoshop displays only RGB and CMYK colours. Trust only printed swatch books (or request proofs from your repro house).

Because you base your choice on a swatch book, you may think the new spot-colour channel's colour and solidity settings don't matter – after all, these affect only your screen representation and prints made on desktop colour printers.

But although you can't trust what you see on screen, you still want something that looks passably correct. There is no solidity table for spot colours, so you have to experiment. Metallic colour inks are generally opaque, so you should use a solidity of 90 or 100 per cent. To simulate a varnish, which also counts as a spot colour, pick a light yellow colour and set the solidity to 0 per cent. For most other colours, a solidity of 50 or 60 per cent works well.

Channel hopping

Once you have your spot-colour channel, you can paint on and add type to it. Keep in mind that each spot colour is its own channel, so there are limitations. First, always paint or fill using black, white, or grey. When you place black text on the PMS 286 channel, for instance, it appears on screen as blue. (The same thing happens with the normal colour channels: if you paint black just on the magenta channel, it appears on screen as magenta.) Similarly, white pixels on the spot-colour channel indicate no spot colour, and grey pixels indicate a tint of the spot colour.



Second, you can't put spot colours on layers – anything you put on a spot-colour channel will appear in front of your other image data.

Finally, spot-colour channels don't automatically knock out the image data behind them. Spot colours overprint the other colours in your image; this may create a mottled look. When you want the spot colour to print without anything behind it, you must set the pixels on the other colour channels to white: set the background colour to white, ⌘-click on the spot-colour channel, click on the composite-colour channel (labelled CMYK, RGB, or Greyscale in the Channels palette), and press the delete key. Even better, after loading the channel as a selection, go to Select-Modify-Contract and choose to contract by one pixel. This creates a trap area, in case the spot colour misregisters slightly on the printing press.

When it comes time to save your Photoshop file and import it into a page-layout program, remember that only the native Photoshop (PSD) and DCS 2.0 file formats can handle spot-colour channels, so don't even think about using TIFF or EPS. However, QuarkXPress 4.x, Adobe PageMaker 6.x and 7.x and Adobe InDesign 1.x can't read spot colours in PSD files, so you should use the DCS 2.0 format if you work in one of those programs.

One workaround is the ImagePort XTension from A Lowly Apprentice Production (£69; XChange, 020 7637 2966), which imports Photoshop files with spot-colour channels into QuarkXPress. It also lets you turn the channels on and off, and change the spot colour itself.

When you import the DCS 2.0 file into a page-layout application, it automatically adds the image's spot colour to the document's list of colours, so you can apply it to type or other elements on your page. However, don't delete this colour: if you do, the program won't be able to separate the spot colour properly.

Sweet spot

People use spot colours in many ways. The following techniques can help your designs hit the sweet spot every time.

Monocolour When you want to apply a single spot colour to an entire image – say, a light pastel colour over a graphic to ghost it back – make a greyscale TIFF image in Photoshop and apply the spot colour to it in your page-layout program. It's easy to change the spot colour later if you need to.

Duotones If you want a duotone-like effect, but also require areas of solid spot colour – for example, to put a solid-colour corporate logo behind a CEO's head shot – convert a greyscale image to Duotone mode (applying desired colours and curves via the Duotone dialog box). Then convert the file to Multichannel mode. Photoshop automatically creates the spot-colour channels, ready for you to paint on or add type to. Again, save the multichannel file in the DCS 2.0 format so it separates properly in your page-layout program.

Bump plates If you're using a spot colour to boost specific colours in your image (for example, making a red car appear more vibrant by adding a red spot colour in that area of the image), you should take a look at CoCo (£229; XChange). This Photoshop plug-in is the best way to build bump plates of this kind. Similarly, CreoScitex's Silvertone plug-in is designed to make bump plates for metallic colours, such as the chrome on a car bumper ($250; 00 322 352 2525; **www.creoscitex.com**).

Limiting yourself to printing only greyscale or CMYK colours is like settling for a small box of crayons. Many printing presses today are set up to handle six-colour jobs, so it's easier than ever to get the rich colours you crave. **MW**

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Xtra coding

Move to XHTML now to avoid trouble later. By Jeffrey Zeldman

Whether you hand-code your Web pages or let a WYSIWYG application generate tags, you probably author in HTML. But the World Wide Web Consortium now recommends XHTML, a hybrid that works much like HTML but is based on XML, a super markup language. And making the switch to XHTML is easy – you'll learn everything you need to know in this tutorial.

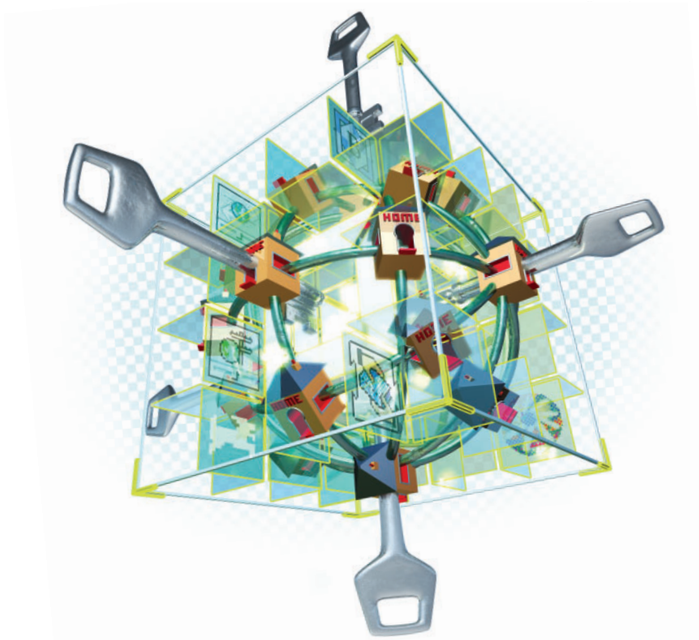
Moving your existing sites to XHTML – and using it to create new sites – can help you in several ways.

Painless transition The Web is moving to the powerful markup language XML. Writing well-formed, valid XHTML pages is the easiest way to make the transition.

More-logical markup XHTML brings uniformity to your document structure. The rules of XHTML help restore the structural integrity of documents that was lost during the Web's rapid expansion between 1994 and 2001. This is critical for large corporations (and for organizations such as libraries and universities) whose Web pages must work well with logically marked-up documents in legacy systems and databases.

One size fits all Unlike with old-style HTML pages, you can easily repurpose valid, well-formed XHTML documents for wireless devices, Braille readers, and other specialized Web environments. Moreover, XHTML's insistence on clean, rule-based markup helps you avoid the kind of errors that make Web pages fail even in traditional browsers.

XHTML is accessible Because they follow strict rules and avoid non-standard markup, well-authored XHTML pages are more accessible than old-school HTML pages, helping you comply with Web-accessibility guidelines (**www.w3.org/WAI/**).



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Extra rules

XHTML is nearly identical to the HTML you use every day – there are just a few additional rules.

Open with the right tags XHTML documents must begin with tags that tell the browser how to interpret them (see "Start at the top").

Use lowercase tags XML, and therefore XHTML, is case sensitive. XHTML tags and attributes must be lowercased, or your document will not validate. (Validation ensures that your pages are error free.)

To "translate" an older document into XHTML, you would recast, for example, `<TITLE>My Totally Valid Web Site</TITLE>` as `<title>My Totally Valid Web Site</title>`.

All you've done is lowercase the title tag. Likewise, `P` becomes `p`, `BODY` becomes `body`, and so on.

The free World Wide Web Consortium (W3C) tool Tidy (**www.w3c.org/People/Raggett/tidy/**) can automatically convert hundreds, or even thousands, of Web pages from uppercase to lowercase tags, making it easy to update even very large sites. Professional Web-editing tools for the Mac have also been upgraded to generate XHTML-style tags. (More on that shortly.)

Quote your attribute values In HTML, you don't have to put quotation marks around attribute values.

In XHTML, however, there must be quotes around each and every attribute value – for example, `height="55"`, not `height=55`. Once again, Tidy can automatically do this work for you.

Close everything In sloppy old HTML, you are able to open tags such as `p` and `li` without closing them. For example, the following is perfectly valid HTML:

```
<p>This is a paragraph. Where will it end?
<p>Who cares? Let's just start another.
```

Young and foolish

This open-ended approach to things made sense when the Web was young. The fewer rules HTML had, the easier it was to learn. Similarly, early Web browsers forgave inconsistent, sloppy, and even invalid HTML (and many of them still do).

All that sloppy HTML has taken its toll on the Web's structural integrity, and can wreak havoc with technologies such as Cascading Style Sheets. For instance, if you apply a style to a paragraph that you haven't closed, a browser may not close the style, either. XHTML forces you to use correct syntax by insisting that you close every open tag:

```
<p>This is a paragraph. Where will it end? Right here.</p>
<p>This is a new paragraph. You can tell because the previous paragraph is now closed.</p>
```

The incredible self-closing tag Having to close tags such as `p` and `li` is logical enough, but what about "empty" tags such as `br` and `img`? In creating XHTML, the W3C decided that those elements should close themselves by including a forward slash at the very end of the tag: `<img src="clown.gif">` should now be `<img src="clown.gif" />`.

Note also that a single blank space precedes this slash. Without that blank space, the closing slash can confuse older browsers. (The blank space enables older browsers to ignore the slash.) Of course, to be valid and accessible, the `img` tag would also have to include an `alt` attribute, and a title attribute wouldn't hurt:

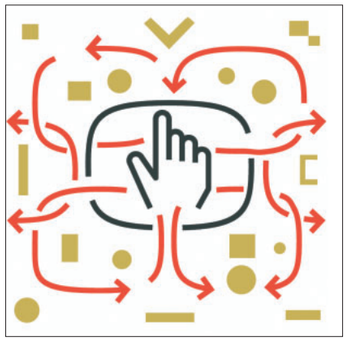
```
<img src="clown.gif" alt="A circus clown." Title="Clown Emmett Kelly demonstrates the squirting-flower trick." />
```

Application allowance

Several applications let you produce Web pages in XHTML. Hand-coders may want to investigate Bare Bones' BBEdit ($119; **www.barebones.com**), Optima System's PageSpinner ($30; **www.optima-system.com/pagespinner**), and Mozquito Technologies' Mozquito Factory (Computers Unlimited, 020 8358 5857; £159, boxed with printed documentation; $149, download only, **www.mozquito.com**).

Dreamweaver fans can either hand-convert Dreamweaver-generated pages to XHTML or download XHTML extensions such as the Super HTML-XHTML DTD extension or the XHTML-compatible Meta Generator extension (**www.macromedia.com/exchange/dreamweaver/**).

Converting to XHTML is easy – and how often can you say that about new Web technologies? But don't let the smooth taste fool you: there's a lot of power behind this easy-to-work-with technology. Learning the simple rules of XHTML today is the best way to prepare yourself and your sites for the XML-driven Web of tomorrow. **MW**



Start at the top

Every Web document should begin with a document type, or DOCTYPE, declaration. But while an old-fashioned HTML page can squeak by without a DOCTYPE, an XHTML document requires a DOCTYPE declaration, such as:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "DTD/xhtml1-transitional.dtd">
```

Because XHTML is really XML (and follows the rules of XML), an XML namespace declaration follows the DOCTYPE:

```
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
```

If you're the super-responsible type, you can learn about XML namespaces at **www.w3.org**. If you're the busy, hard-working type, just cut and paste.

Many XHTML 1.0 pages begin with an XML prologue, `?xml`, which precedes the DOCTYPE and namespace declarations. This little text widget does three things: it defines your page as an XML document, it indicates the version of XML used, and it specifies the character encoding within your document – mighty useful when you're creating a site in a language other than English.

Unfortunately, many browsers (including Microsoft Internet Explorer 4 and 4.5 for the Mac, and Netscape Navigator 4) choke on the `?xml` prologue.

So for backward compatibility, it's usually best to omit it. Don't worry; the prologue is optional, and you can write perfectly valid XHTML 1.0 documents without it. If you're working on an international site and your page will include non-ASCII characters, you can probably get by with a simple meta tag, such as:

```
<meta http-equiv="Content-Type" content="text/html;charset=UTF-8" />
```

If you've made it this far, congratulations. Understanding how these opening declarations work is the most confusing part of making the XHTML transition. The rest of the process will be a piece of cake.

Web publishing tips and tricks

Lighting-up links

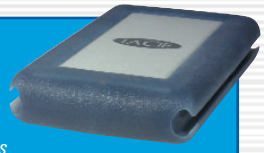
Avoid making visited links more visible than current or unvisited links. A Web-site visitor's eyes should be attracted to links that promise new information, not links to remind them of where they have been.

Code change

When viewing changes to HTML code in a Web browser, remember to save the changes before you look. Any changes aren't reflected until the code has been re-saved.

The tip of the month wins a 30GB LaCie PocketDrive

We reward the tip of the month with an 30GB LaCie PocketDrive, worth £249. This USB and FireWire drive offers storage on the go for portable users, or will save valuable desktop space for iMac and Power Mac owners.





• X snaps • CUDA switch • Spam busters

Q&A/tips

Handy hints and readers' questions answered. **By Christopher Breen**

Virtual Windows on the cheap

Q I would like to run Connectix's Virtual PC on my Mac. Though I have a copy of Windows 2000, do I need to buy the Windows 2000 version of Virtual PC? Or can I purchase the less expensive DOS version, and install my own copy of Windows 2000?
Przemyslaw Krojcer

A This is the kind of skinflint spirit I admire – particularly in this challenging economic climate. You can indeed save some readies by purchasing the DOS-flavoured version of Virtual PC (VPC) rather than the one smothered in rich – nay, fatty – Windows 2000 sauce. Virtual PC for DOS (Computers Unlimited, 020 8358 5857) costs a mere £75 (ex. VAT), while VPC for Windows 2000 is priced at £140. The Windows 98 and ME versions cost £149 each (**www.connectix.com**).

Installing an additional OS isn't difficult. Simply launch Virtual PC, tell it you'd like to create a new machine, name that machine, and select the Guide Me option.

Next, create a new drive image and tell VPC what sort of OS you intend to install – in your case, Windows 2000. Start the virtual machine and insert your Windows 2000 CD, letting it mount automatically. Press any key to continue, choose the option to boot from the CD, and watch as Windows slowly does its stuff.

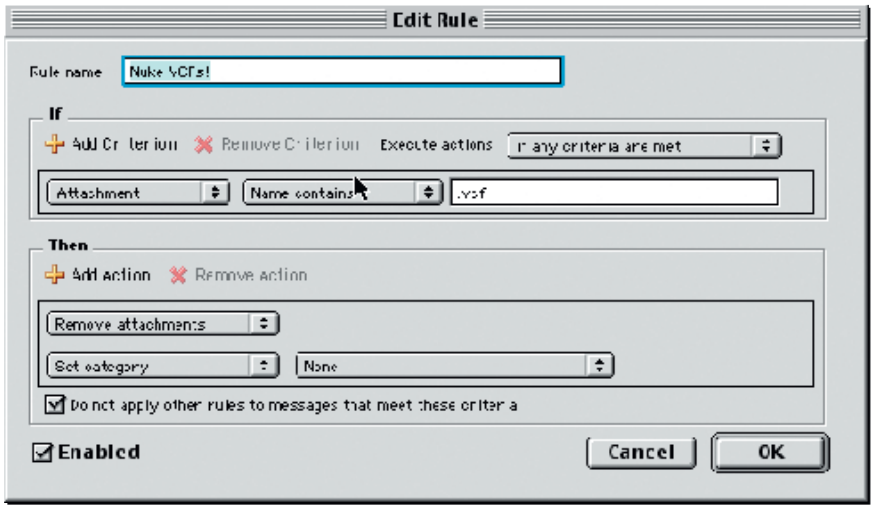
If the OS you're installing requires a floppy disk to boot, you'll have to hunt around for a Mac with a floppy drive and then use Apple's Disk Copy utility to create a disk image of that floppy. When it's time to boot the virtual machine, drag your newly created floppy-disk image to VPC's floppy-disk icon.

Throwing pictures to X

TIP Those who saw Steve Jobs' keynote address at July's Macworld Expo are aware that you can plug a digital camera into a Mac running OS X 10.1 and the pictures stored on the camera's media card will automatically be sucked into the Mac (and no, you needn't first hurl the camera to a nearby subordinate for this to work).

What Apple didn't make particularly clear is that you don't need a direct USB-to-camera connection for this to work. You can, for example, plug a USB card reader into your Mac, shove a media card into this reader, and Image Capture should pull the images into the Mac.

Note, however, that you must use some kind of USB adaptor in order for Image Capture to do its job. Regrettably, 10.1 doesn't recognize PC-card adaptors.



Upgrading iMac hard drives

TIP Before you replace the hard drive on an iMac with 233-, 266- or 333MHz processor speeds, be warned: if your new hard drive exceeds 8GB, you must partition that drive so that the first partition is 8GB or smaller, then install the Mac OS on the first partition. Failing to do so will cause your iMac to boot to a grey screen or to Open Firmware.

Modem speed surge

Q Does disconnecting a Mac's modem from the surge protector to speed-up the modem make the modem more susceptible to damage from power surges and spikes?
Alex Grant

A Possibly. I weasel for this reason: should lightning travel from the heavens, through power lines, and into your home, anything but an industrial-grade surge protector would collapse under the strain – allowing devices

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Block email business cards

TIP *I was tired of being bombarded with the VCF files (virtual business cards) people attach to their email messages, so I created an email rule in Outlook Express to automatically delete them. Here's how:*

Select Rules from the Tools menu, click on the New button in the Mail Rules window, and name the rule (I called mine "Nuke VCFs!"). In the If section of the window, select Attachment from the pop-up menu, select Name Contains in the pop-up menu that appears, and type .vcf in the Contains field.

In the Then portion of the window, select Remove Attachments from the pop-up menu, and then close the Mail Rules window. From now on, VCF files will be automatically stripped from incoming email.
David Battino

CUDA bought Mac back to life

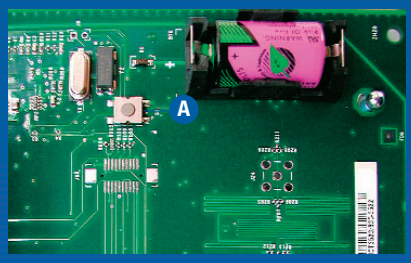
TIP Have a seemingly dead Mac? So did I – until I gave an oft overlooked button, found in many late-model Macs, a push. Here's my story:

While testing a Power Mac G4/733, I shut down the computer, swapped in a couple of 128MB RAM modules, and pressed the power button; then… nothing. The Mac deigned to play an error tone, and that, my friends, was that.

Knowing the RAM worked perfectly well in another Mac, I zapped the PRAM by holding down the ⌘-option-P-R keys at start-up in an attempt to bring the Mac to life. This catch-all correction can generally fix such wayward behaviour. In this case, though, there was no change.

I then shut down the computer, opened the case, and eyeballed the RAM to be sure it was properly seated. That's when I spied the tiny CUDA button near the battery (see "Woulda, shoulda, CUDA") – a button that, when pushed, resets the Mac more thoroughly than a PRAM zap. I gave the CUDA button a two-second push and closed the case, and the Mac booted up with nary a complaint.

Lesson learned? When zapping the PRAM won't do the trick, give your Mac's CUDA button a try.



Woulda, shoulda, CUDA
Pressing the Mac's CUDA button (A) lets you perform a reset that's even more thorough than zapping the PRAM.



Quicksilver shut down

TIP *If you crash on a Quicksilver G4, you can shut it down by pressing and holding the power button for four seconds. This is particularly useful when you crash while trying to shut down your computer.*
Max Hanuy

Macworld's production editor Woody Phillips and contributing editor Christopher Breen answer readers' questions and select reader-submitted tips for this column. Send your question or tip (include your address and phone number) to Q&A, Macworld, 99 Gray's Inn Road, London WC1X 8UT. You can also send an email, marked Q&A in the subject line, to **qanda@macworld.co.uk**. We pay £25 for each tip published here. We cannot make personal replies, so please do not include a stamped addressed envelope.

attached to it to be thoroughly charred. This is why prudent souls unplug their computers – and any other electronic devices they cherish – when such celestial fireworks begin nearby. They also remove any phone cords leading into those computers – because electricity can zip down phone lines too.

Even with the kind of less-severe surges created by heavy-duty appliances or your local power company, some surge protectors may provide no protection at all. Cheapo surge protectors don't respond quickly enough to keep deadly surges and spikes at bay.

But there are concrete ways to tell if yours is up to scratch. First of all, be sure it meets the UL 1449 Compliance Standard. This safety standard dictates how much voltage is allowed to pass through the protector. In addition to this standard, look for a rating of 330V or less. Your surge protector should also have a response time of no more than five nanoseconds – one nanosecond is preferable. And, a device with a failure light provides greater protection – surge protectors can burn out, leaving your gear vulnerable. Finally, get a surge protector that carries a couple of phone jacks or ADSL/cable/satellite jacks. Errant electricity can travel down these connections as well, and if it does it could fry both your modem and motherboard if you're not using a surge protector.

Extension overload

Q **Each time I upgrade Mac OS or QuickTime, more extensions are added to my hard drive. Which ones can I delete?**
Ed Sherrill

A This question seems to return to us with the same regularity as salmon to their breeding grounds. Unlike salmon, however, it will soon return no more. For better or worse, with Mac OS X, extensions and control panels become a thing of the past.

Until you make the leap to OS X, you can open the Extensions Manager control panel to see which of the OS 9 add-on doodads your Mac requires. Select Mac OS 9.1 Base (or whatever version of the OS you're running) from the Selected Set pop-up menu, and scan down the list of items. Apple has put a check-mark by items it feels are essential for the proper operation of your Mac. But even this list contains far more active items than are necessary.

The trick is to learn what a particular add-on does so that you can make an informed decision about whether to terminate it. There are loads of ways to gain this information. You could, for example, open Extensions Manager, click on an item, and then click on the Show Item Information triangle to reveal a window that provides a terse description of that item. I've also found it helpful to view items by package (select As Packages from Extensions Manager's View menu). This groups related items in a way that helps you understand what particular add-ons do, and it lets you enable or disable a slew of items with a single click.

There are also a few third-party tools that can help. Casady & Greene's terrific £81 extension-managing utility, Conflict Catcher 8 (Softline, 01883 745 111), will, among other things, impart the purpose of most extensions and control panels you throw at it. Teng Chou Ming and Peter Hardman's $20 Extension Overload (**www.extensionoverload.com**) is another good source of information, and, like Extensions Manager and Conflict Catcher, it allows you to manage sets of extensions. Dan Frakes's hopefully-updated-to-include-Mac-OS-9.2-by-the-time-you-read-this $20 InformInit (**www.informinit.com**) is another favourite. InformInit distinguishes itself by providing exhaustive information about the purpose of any extension or control panel that you're likely to encounter.

Viral worries

Q **I've heard about the recent outbreaks of the Red Alert worm and wonder if my iMac running OS 9 is safe.**
Beverly Mitchell

A From direct attack, it is. But that doesn't mean you're out of the woods. As you probably know, most computer viruses are designed for the enjoyment of Windows users. But cooties such as the Red Alert and Sircam worms can cause enough collateral damage to seriously muck-up a Mac user's day. How so? Last summer, Code Red flooded enough ISP servers that many ISPs shut down their users' ability to run personal Web servers. Code Red also disabled a number of routers – routers used by both Mac and PC users. Sircam wasn't nearly as devastating, but it did

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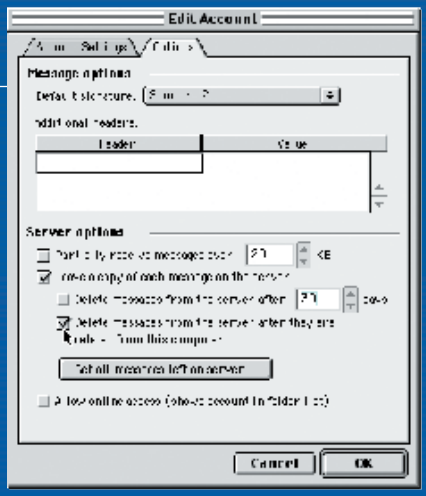
Erase all trace of spam

TIP Last month, I presented readers with a list of words they could use in their email client to filter spam – "viagra" and "ADV", for example. Reader Diane Landon asked how she could configure Outlook Express so that spam is not only diverted to the Trash, but is also automatically deleted from her ISP's server. Here's how:

Select Accounts from the Tools menu and double-click on any account you want this to work with. Click the Options tab, and check the Delete Messages From The Server After They Are Deleted From This Computer option. Click OK. Now select Schedules from the Tools menu. In the resulting window, click New, select On Quit in the When portion of the window, and Delete Mail in the Actions portion of the window. Select the folder whose contents you want deleted and the length of time you're willing to let the deleted mail sit there — for example, 1 day.

The crud in your Deleted Items folder (or whichever folder you choose) will now be deleted every day (or whatever length of time you've chosen) when you quit OE.

Thanks to the Delete From Server option you selected, OE will make sure that the stuff you trashed with the schedule will be removed from the server.



cause a load of annoying messages to appear in Mac mailboxes. There's little you can do to protect yourself from such collateral damage. If a computer-toting sociopath decides to exploit one of the many security breaches in Microsoft's operating systems for the pure naughtiness of it, you'll just have to ride it out. In the case of a Sircam-like worm, you can create an email filter that automatically trashes any files whose body contains a phrase associated with the virus (Sircam email contained the phrase "I send you this file in order to have your advice," for example).

Mac-specific viruses are still quite uncommon – so much so, in fact, that I haven't contracted a virus on one of my Macs in years. I still use virus-protection software to be safe, but so far it's hardly paid for itself.

That will likely change with OS X, however. The core of OS X – Unix – has been around for a long time, and there are plenty of people out there who know how to exploit its weaknesses. When I begin doing real work in OS X, I'll be on the lookout for an OS X-compatible virus-protection utility.

Deleting data

Q I recently purchased a new, higher-capacity hard drive, and moved all my old data to this drive. I now want to erase my old hard drive, and am confused about the terms initializing and formatting. What's the difference? How do you perform these procedures?
Matthew Tillson

A When you want to erase a drive quickly – without actually wiping most of your data from the drive or checking the drive for defects – you'd choose to initialize the drive (also known as performing a high-level format). Initialization doesn't remove the data from your drive; rather, it expunges its directories – the information the drive uses to locate files. (That's one reason initializing takes just a few seconds.) Consequently, you can still recover old data from a drive after initialization.

To sweep the data off your drive entirely, you'd choose a low-level format. This wipes out not only the drive's directories, but also its data. During a low-level format, the formatting software seeks out bad blocks on the drive – physical areas of the drive that the software determines are unreliable – and maps them out so your Mac can't write to them. A low-level format takes much longer than a high-level format (up to an hour for a multi-gig drive).

Note that while you can do a low-level format on a SCSI drive with Drive Setup 1.1.7 and later, you can't do it with an ATA drive. To more thoroughly wipe an ATA drive, you'd instead choose the Zero All Data option. This overwrites the drive with a sequence of zeros – making it far more difficult to recover data from the drive. (Note: If you want to really scramble data, use a sterner tool such as Wipe Info, part of Symantec's Norton Utilities.)

Performing each of these operations is simple. Just launch Drive Setup (found in the Utilities folder of your Applications folder in OS 9.1), select your drive, and click on the Initialize button. To perform a high-level format, click on Initialize again.

If you prefer a low-level format, select Initialization Options from the Functions menu. In the resulting window, select the Low-Level Format option – you can also choose Zero All Data in the same window. Select the options you want and click on the Initialize button to wipe your drive.

Restore without wiping

TIP Those who received several software-restore discs with their Macs may wonder how they can restore just a single application. These discs offer no option to custom install applications; what choice do you have but to allow Software Restore to erase your hard drive, and reinstall the applications it originally shipped with?

According to Apple, you can work around this dilemma. Here's how:

1. Pray that you have 2GB of hard-drive space (you'll need it to perform this trick).

2. Create a new folder.

3. Copy the disk-image files on each of the Software Restore discs into this new folder. These disk images may be found in a Configurations folder.

4. Launch the Disk Copy application.

5. Drag the first disk-image file (it will be named something like PowerMac HD Disc 1.dmg) onto the Disk Copy window. When you do, a disk image will appear on your desktop. That disk image contains the software that originally shipped with your Mac

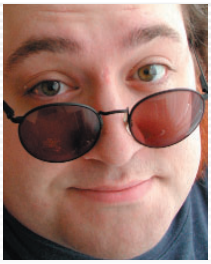
6. Drag the software you want to reinstall from the disk image onto your hard drive to install. MW



Outdated OS

TIP *Do you doubt that Apple believes any version of the Mac OS other than X is old news? Then try this: Under Mac OS 9.2 and earlier, select About This Computer from the Apple menu and ⌘-click on the two-faced Apple logo.*
Grant G

Andy Ihnatko



RealBasic 3.5 is every geek's dream, letting them get down to the nitty gritty of making apps for Macs.

Back to Basic

When they add a load of new features to my favourite software, I'm absolutely insufferable. I'm insufferable to editors and employers who foolishly expect me to do the jobs they're paying me to do. I'm insufferable to friends and family, who are probably cursing my name as they wait with all their luggage at the curb of Terminal B. Even the visits with my friendly delivery man seem to lack a certain *je ne sais quoi*.

I can't be bothered – there's a new version of Real Software's RealBasic out there, and unless I can interact with you via your methods and properties, I can't help you. I'm playing with source code. I'm spending some time with RealBasic 3.5, a development environment that is to the creation of source code what a Pez dispenser is to the delivery of chalky little sweets. I mean, I like Metrowerks' CodeWarrior, the programming environment used to build most of the software you use every day, but new versions of it don't inspire me to take the phone off the hook and design some new software as soon as I'm done installing it.

'Every great thing that's come along has happened when users whose needs weren't being met shrugged their shoulders and built their own solutions.'

Midnight oil

No, RealBasic brings a wholly different vibe. I'm not inside a cubicle writing commercial software. I'm still the same sort of programmer that I was back in grammar school: one lone geek hammering at little projects during work sessions that last until 5am, and include prescription-strength Coke and fits of cursing potent enough to cause the four relevant letters on my keyboard to vibrate in sympathetic resonance. RealBasic wants you to play with it.

You can play with it even if you've never written a program that prints "Hello" in an infinite loop. Maybe you can't code your dream app, but you can still use RealBasic to draw your dream app. You can create windows, dialog boxes, and menus, and wind up with a functioning thingamabob that at least looks like an app for mathematically testing and examining the variables that contribute to a superior Lancashire Hotpot.

RealBasic transforms your relationship with your Mac. In the end, you're either a person who controls and uses computers, or someone who is controlled and used by them. RealBasic tips the scales in your favour.

The results of my career-aptitude test were the most valuable and influential part of my entire secondary-school education. According to these test results, the single career that would bring me the greatest chances of happiness and success was Master of the Universe.

I understood what to do right away. I had to be serene unto myself. I had to accrue power. I had to exercise that serenity and power in ways that befuddled and annoyed. Most of all, the result of all those efforts had to be keeping the populace under my thumb.

With all this in mind, I created AndyDOS and secretly installed it on all the Apple IIe's in my school's computer lab. AndyDOS was fast and powerful, and it played guitar riffs from a "Weird Al" Yankovic album at random intervals. The teacher who ran the lab turned to me for guidance in this, her hour of greatest mystery and need.

But the pretty graphical-interface of the Mac is a tough nut to crack. You can engrave that one-line "Hello" program you wrote for the Apple II on the inside of a bracelet. Now try to write it on the Mac: that one line has to be wrapped inside dozens of blocks of code.

RealBasic brings that sense of play back from days gone by and elevates it. Do you want to see what it's like to write a program that plays QuickTime files? Just drag that function into your app from a floating palette. It goes on and on, more with each new release of RealBasic and each new contribution from independent developers who release their own libraries of ready-to-go code.

User development

The worst thing that could happen to computing would be for it to become nothing but a process of consumers buying products. Every great thing that's come along (from the development of the Apple I, all the way through the modern open-source-software movement) has happened when users whose needs weren't being met shrugged their shoulders and built their own solutions.

AppleScript slaps at the problem. I have left the nuts and bolts of creating and posting my Web-site content to a series of AppleScripts that I developed with Main Event's Scripter and Late Night Software's Script Debugger – two programs that are *de rigueur* for anyone who wants to proceed further than "Hello" in the path to AppleScript Jedidom. But a real, stand-alone app, something that can be shared without the baggage of "helpers", solves the problem. Apple's forthcoming AppleScript Studio (**www.apple.com/applescript**) promises to change matters some, because it'll let you build full-blown apps using only AppleScript.

Still, while scripting is effective, it usually involves just tying other apps together. Programming is a creative and artistic process, and with RealBasic an app is a blank canvas until you take up a mouse and begin to draw – all you need is to be left in peace. **MW**

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